# THE BUILDER

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*ARCHITECTURE & THE BRITISH ARCHITECT*

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## THIS WEEK'S NEWS

*A REVISED Standard Form of Contract has been adopted by the LCC and it is stated that this form, for use with quantities, and one other for use without quantities, will be the only two Standard Forms used by the Council.* p. 339

*THE RESULTS of the competition sponsored by the Uganda Electricity Board for a new Head Office building in Kampala together with details of a new competition for a church to be erected at Sighthill, Edinburgh, are given on* p. 339

*THE WINNING DESIGNS in the New Zealand low-cost housing competition are shown on* p. 341

*THE DANGEROUS CONDITION of the fabric of Westminster Abbey was described last week by Dr. Adam Fox, Archdeacon of Westminster, when he made a special appeal to the women of Britain to help the £1m. restoration fund.* p. 357

*LETCHWORTH GARDEN CITY has celebrated its Jubilee this week. The growth of the town from its founding in 1903 is traced by a correspondent on* p. 357

*ARTISTS OF FAME AND PROMISE, a current exhibition at the Leicester Galleries, London, is reviewed on* p. 358

*A REPORT has been made of what is believed to be the first case in which the application of the National Joint Apprenticeship Scheme has been before the Industrial Disputes Tribunal* p. 358

*PROPOSALS for checking the dilapidation and improving the amenities of the eight million rent-controlled houses in Britain are made in a report which has been drawn up by the Rent Reform Committee.* p. 366

*APPRECIABLE REDUCTIONS compared with last month in the prices of plumbers' brass work, copper, zinc, etc., but increases in the prices of certain types of bricks, tiles and pantiles, and certain paint raw materials are shown in our table of current prices of materials on* p. 367

*FURTHER DETAILS of the Saltire Society awards for good housing design for 1952 are given on* p. 373

## TRAINING FOR MANAGEMENT

DURING the past year there has been a growing awareness that the products of the building industry have reached the level of cost at which the law of diminishing returns has begun to operate quite sharply. But for the large capital investment programme of central and local government upon housing and schools and in a lesser degree upon constructional work in connection with defence, the outlook for the industry would indeed be bleak. There is no section of the industry or the ancillary materials-producing industry which can claim to have reached the maximum point of efficiency; in fact, every responsible individual connected with building is aware of the pressing need for improved output and an abatement of costs. While many are agreed upon the seriousness of the present position, there is by no means a similar measure of accord as to the means of overcoming the present problem of how to increase productivity.

Much has been spoken and written upon the paradoxical difficulties encountered by each group of interests. Many fingers have been pointed in practically every direction, scapegoats abound and to the observer who seeks the real villain in the piece, finding the mythical bag of gold at the foot of a rainbow is, by comparison, mere child's play. Committees, working parties, productivity teams have all directed their various attentions to the detailed examination of every aspect of the enigmatical building industry, and reports have been published, considered recommendations have been made but, alas, no great progress can yet be recorded. There is still a marked lack of pre-production planning to be found and an absence of real co-ordination and teamwork among the various individual groups engaged upon many present-day projects. There is still a considerable measure of waste both in human energy and materials which, with better control and direction, could reflect a marginal reduction in building costs. There is at the moment a strange general reluctance to ensure the future well-being of the industry by introducing and maintaining adequate and progressive training schemes in which technical and managerial skills are seen in their correct perspective. It is often argued that by its very character and composition the whole managerial function of the building industry is immeasurably complicated. This admitted fact alone should encourage a far greater awareness of the need for the highest standards of managerial competence and skill. The responsibility of design and execution being largely conducted in airtight and watertight compartments—without any degree of mutual criticism or the interchange of experience and opinion so vital to any form of production—does not help towards optimum organisation and administration. An increasing number of separate specialist groups, each with its own techniques, has entered the constructional field and has tended further to sectionalise the industry.

The necessarily itinerant nature of building work has always rendered the consolidation of employment in the industry more difficult than in the static industries, and with the post-war period of overfull employment the usual fluctuations and turnover of building labour have been vastly aggravated. All these factors spotlight the fundamental importance of sound management in its widest sense. Unless and until those at top level in the industry (and that includes both architects and master builders alike) realise that they are directly responsible for the climate and atmosphere in which work is executed, it is doubtful if there can or will be any large-scale improvement in general efficiency and output. It is the outlook, competence and example of those at the top which is reflected at all other levels of the industry. If high standards of modern management techniques are maintained at the top, then, and then only, will high standards of organisation and supervision be possible at middle and lower levels of the management structure.

It must be evident that there is a real urgency for a bold and enlightened lead in carrying out a critical examination of the whole management structure of the industry so as to ensure the fullest co-ordination and utilisation of existing skills and potential developments. Mr. Harold Ridge, in his recent presidential address to the membership of the Institute of Builders, very properly drew attention to the need for training for management and there is no doubt that his reference to a renewal of contacts between the Institute and the National Federation of Building Trades Employers in the matter of educational provision at university level will give profound satisfaction to those who have the future well-being of the industry at heart. But the establishment of suitable degree courses is a long-term matter, and in the meantime, before effective training can be undertaken upon any large scale, the industry itself must initiate a close examination and detailed study of its management function, so that there is a far clearer understanding of the various responsibilities and skills that exist at the various levels of the industry. There can be little doubt that the Institute, with its diverse and practical membership drawn from the top managerial level of the industry, enjoys a unique position in being able to call upon a number of its members to initiate a series of management studies. It would be of infinite value if the Institute of Builders were to set up a small study group and invite the RIBA and RICS to appoint a member or two so that the whole field of building management could be reviewed from the practical angle. Productivity and education for management are very closely related, and managerial studies must play a part in promoting a development in this field of education. The studies to be successful should range over a wide field and, if conducted in a statesmanlike manner, should have a considerable impact upon the future education of architects, builders and surveyors alike.

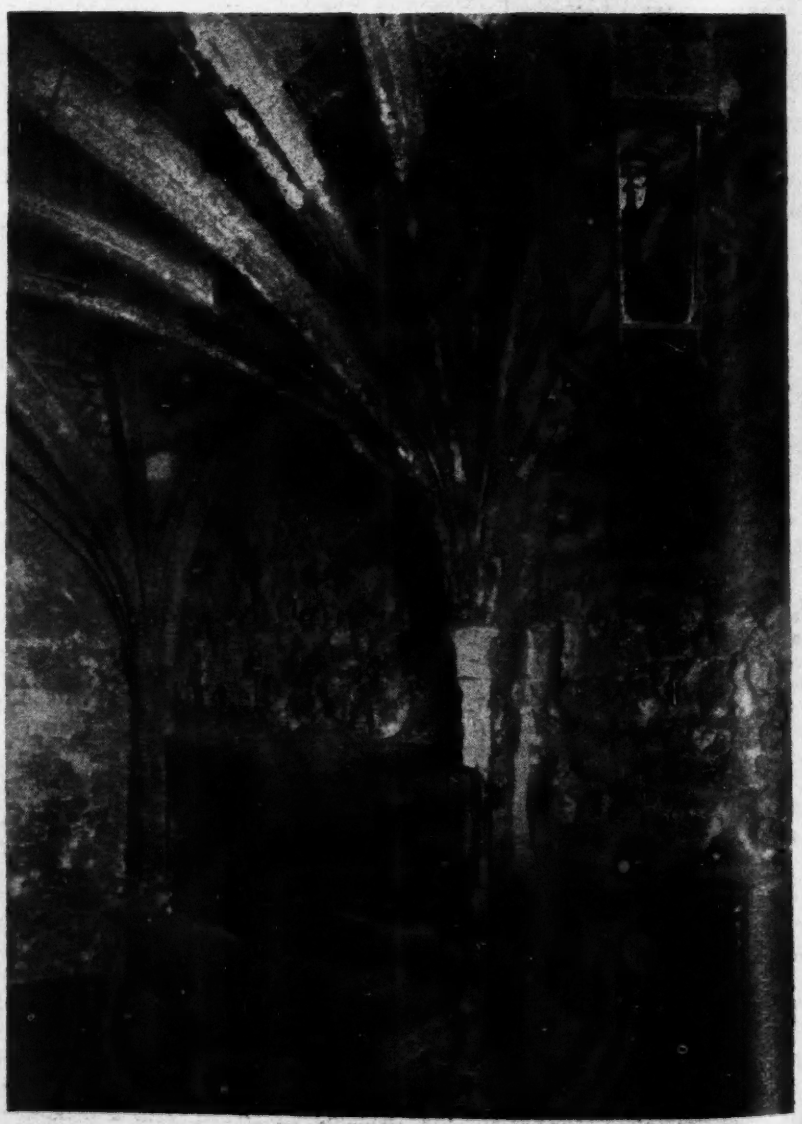
# *NOTES & NEWS*

## *WESTMINSTER ABBEY*

THE news that parts of Westminster Abbey may have to be closed unless repair work can start immediately, has undoubtedly come as something of a shock to the public despite the earlier warnings and the launching of a £1m. appeal last January. Perhaps this may be due to the fact that so many had recently seen the abbey in all its apparent timelessness, at the great Coronation service, but, in any event, if the shock should help loosen purse strings it can only be salutary. Too many of us are apt to take our national monuments for granted.

In making the special appeal to the women of Britain last week to help the £1m. appeal, Dr. Adam Fox, Archdeacon of Westminster, said that so far only £300,000 had been raised, and there was a long way to go before we could feel that the abbey was safe. That he was not exaggerating when he spoke of the " grave danger " of the abbey is well brought out in the photographs reproduced on this page, showing the advanced state of decay of some of the stonework. Nevertheless, the main structure of the building is still sound after 700 years, and if the money can be raised to carry out the necessary repairs expeditiously, the abbey can hope to survive into times when the ruinous attacks of a polluted atmosphere, which have dealt the fabric more damage in the past 100 years than in the previous centuries, will be mitigated and the natural life of the restored stonework not so unnaturally reduced by smoke and fumes.

Dr. Fox's statement on the condition of the abbey is given on page 357.



*THE ABBEY'S DECAYING STONEWORK.—These two examples of the decaying stonework at Westminster Abbey—that on the left of a flying buttress, and on the right a corner of the cloisters—serve to illustrate that atmospheric pollution, to which the present plight of the abbey can be largely ascribed, attacks stonework with equal intensity both in the open situations and in those not directly exposed to the weather. Stonework inside the abbey itself is also reported to have suffered severely from this cause.*

## LCC FORM OF CONTRACT

INFORMATION has been received by the London Master Builders' Association from the London County Council that the Council have adopted a revised Standard Form of Contract, to be known as Form AC 1, and it is stated that this form, for use with quantities, and one other for use without quantities, will be the only two Standard Forms used by the Council in future. The special form previously used for works to be completed in sections has been abolished and provision for this, when appropriate, has been made in certain clauses of the new form. The LCC state that most of the revisions do not alter the intention of the contract but consist largely of changes in the order and layout of the clauses. There are alterations with regard to the requirements for insurance (in clauses 7 and 8) and with regard to the terms of payment (clause 23).

Whatever their merits or demerits may prove to be, the use of two forms only by the Council should prove less confusing than the ten variations employed heretofore. It is understood that the new forms are at present under examination by the LMBA.

## VISIT TO SOVIET UNION

AT THE INVITATION of the Union of Soviet Architects, and under the auspices of the Society for Cultural Relations with the USSR, a British architectural delegation left London on August 29 for a three weeks' visit to the Soviet Union. Members of the party were as follows: C. C. Handisyde, ARIBA; A. D. Jones, FRIBA; B. Lubetkin, Colin Penn, ARIBA; F. P. Tindall, MA, AMTPI; R. S. Ellis, LRIBA; C. R. Whittaker; F. R. Yerbury, Hon. ARIBA; and F. R. S. Yorke, FRIBA.

## DESIGNERS' CONFERENCE

BATH HAS BEEN CHOSEN for the British Colour Council's tenth designers' conference, which is to be held from October 5 to October 8 next. It is usual to hold the spring Conference in London and the autumn one in some place of outstanding interest to the delegates who will represent the many trades concerned with interior decoration. Earlier conferences have been held in Edinburgh, York and Chester.

On Monday, October 5, the conference will open with a dinner at which the Mayor of Bath, Alderman Major Adrian Hopkins, MC, and the Mayoress will be present. Professor Richardson, RA, will be one of the speakers. On Tuesday morning, October 6, an "Any Questions" session under the chairmanship of Sir Ernest Goodale, CBE, MC, president of the British Colour Council, will be held. Questions will be asked by the delegates and answered by a panel of speakers. On October 7, delegates will visit the Bath Cabinet Makers and see the planning of some interior decoration schemes and the production of furniture. A visit will be made to Corsham Court, home of Lord Methuen, part of which is used by the Bath Academy of Art. On Thursday morning, October 8, there will be an "Open Forum," a discussion for delegates only, and the conference will end with a visit to the Avon India Rubber Company's works at Melksham.

## DUTCH BUILDERS' VISIT

THE RECONSTRUCTION of the central area of Coventry has been the main subject of study for a party of 11 Dutch builders who came to Britain this week at the invitation of the Coventry and District Association of Building Trades Employers. They were welcomed by Mr. J. James, president of the Association.

Their visit is one under a scheme inaugurated in 1947 for the interchange of parties of builders between Britain and Holland. The building industries of both countries have similar problems to overcome, particularly in connection with the rebuilding of bombed cities.

The leader of the Dutch party is Sir John Bangert, past-president of the National House-Builders' Federation of the Netherlands. The Dutch building industry, says Sir John, is fully occupied at the moment. Houses are being built at the rate of 65,000 a year and the total estimated need for the whole country is 275,000 houses. The slum clearance problem in Holland is small compared with that which has to be dealt with in Britain, but the Dutch population is steadily increasing and more homes will have to be provided in the future to keep pace with it.

In addition to their tour of Coventry, the visiting party will travel up to Liverpool where they will inspect the cathedral and the Mersey tunnel.

## PROFESSIONAL ANNOUNCEMENT

MESSRS. HARRIS AND PORTER, chartered quantity surveyors, have moved their Portsmouth offices from 103, Palmerston-road, Southsea, to 148, Commercial-road, Portsmouth. The telephone number will remain as Portsmouth 4221.

## COMING EVENTS

*SUNDAY, SEPTEMBER 6*

TOWN PLANNING INSTITUTE.—Town and Country Planning Summer School. University of Bristol. Continuing until September 12.

*WEDNESDAY, SEPTEMBER 9*

LMBA (CENTRAL AREA No. 1).—Lunch and Brains Trust. Derry and Tom's Restaurant, High-street, Kensington, W8. 1 p.m.

## FROM "THE BUILDER" OF 1853

*Saturday, September 3, 1853.*

VALUE OF LAND IN THE CITY OF LONDON.—The estates committee of St. Thomas's Hospital met a fortnight ago to receive tenders for a piece of land belonging to their corporation, and which has reverted to them in the course of the improvements in the neighbourhood of and connected with the new Royal Exchange. The land in question is situated at the north-west corner of Finch-lane, which is to be widened and rounded, and contains only about 400 sq. yds. It is let on lease for a term of 80 years, and for this small piece of land the enormous rent of 1,300*l.* per annum net has been given by the Australasian Banking Company, with a condition to build upon it a substantial stone building. This letting, if calculated at its freehold value, at the present price of Consols, would represent the extraordinary sum of rather more than 520,000*l.* per acre.

*"Great Scott! Now I know why the staff aren't finishing these full-sizes!"*

*** *The Radio Show opened at Earls Court on September 2.*

## COMPETITION NEWS

### Uganda Electricity Board

FIRST prize of £1,000 in the Uganda Electricity Board's competition for a design for a new Head Office building in Kampala has been won by Mr. E. I. Graaf, of Johannesburg.

A South African architect, Mr. N. L. Hanson, BArch, ARIBA, MIA, of Johannesburg, was the assessor in the competition, which attracted 167 designs from many parts of the world.

Other placings were: Second, Messrs. Peatfield, Mayo and Bodgener, of Blackheath, London, SE3 (£750 premium); third, Messrs. Nurcombe, Summerley and Lange, of Johannesburg (£500 premium); and fourth, Mr. J. M. Shunn, Johannesburg (£250 premium). Highly commended were The Planning Group of Cape Town; Mr. H. Bramhill and Mr. G. Subiotto, of London.

The new building is to be erected on the site on Kampala-road between Speke-road and Pilkington-road now occupied by the Protectorate Agent. The estimated cost is approximately £350,000.

### Church at Sighthill, Edinburgh

THE CHURCH OF SCOTLAND Home Board invites architects resident in Scotland to submit designs in competition for a church and ancillary buildings for a site at Sighthill, Edinburgh.

The assessors will be Professor Robert H. Matthew, CBE, MA, ARIBA, ARIAS, Mr. Harry Taylor, ARIBA, ARIAS, Architect to the Church of Scotland Home Board, and the Rev. Professor J. G. Riddell, DD, Convener of the Church of Scotland National Church Extension Committee. The following premiums are offered: Design placed first, £750; second, £450; third, £300; fourth, £200; fifth, £100.

The closing date is January 30 next; last date for questions October 15.

Conditions and plans from the Rev. Ivan F. Tibbs, MA, The Church of Scotland Offices, 232, St. Vincent-street, Glasgow, C2. Deposit 2 gns.

# CORRESPONDENCE

## THE DOME OF ST. PAUL'S

To the Editor of *The Builder*

SIR,—I was greatly interested in the references in your leading article last week (reviewing Mr. Martin S. Briggs's new book on Wren) to the design of St. Paul's and particularly to that most ingenious part of the structure, the dome area.

After Charles II had agreed to the abandonment of the Warrant Design, "upon afterthoughts," as *Parentalia* intriguingly puts it (and it must have been on Wren's advice, for the King could not have known much about architecture), Wren must have been in something of a quandary. Presumably he had to keep to the Warrant plan so as to avoid arousing the suspicions of the clergy and the Duke of York, and the problem was how to abandon the fantastic superstructure of the Warrant Design and to design something better that would accord with the plan.

There is an elevational drawing in All Souls' College, Oxford, which shows Wren's intermediate thoughts on the design of the Cathedral. The exterior of the church is as now built except that the design of the dome and the western towers is different. The dome, obviously inspired by St. Peter's, Rome, is larger than the present one and the weight rests evenly on the piers and arches and also, apparently, over a great part of the bastions. Why did Wren abandon this fine design? Though not so graceful as that carried out, it seems to suit the substructure much better. Perhaps it was found to be too heavy for the piers or too large in relation to the building.

The existing dome structure is smaller in diameter and better proportioned to the Cathedral than the one shown on the All Soul's drawing; it is also lighter in construction, but not particularly well suited to the substructure, as you say. In adopting it, Wren overloaded the inner ends of the piers and was forced to devise counterforts to help to spread the enormous weight of the dome structure over the outer ends of the piers and the inner corners of the bastions. These devices, however, were to prove ineffective.

It is no disparagement of the great man to suggest that he was not infallible. It seems clear that he got into these difficulties with the dome structure through the decision to abandon the Warrant Design while apparently carrying it out. If he had not been committed to the Warrant plan it can hardly be doubted that he would have designed supports much better adapted to the splendid dome that ultimately took shape.

A STUDENT OF WREN.

## ARCHITECTURAL EDUCATION

To the Editor of *The Builder*

SIR,—Mr. Raglan Squire, in his letter in your issue of August 14, has not attempted to answer or comment on the suggestion made by the previous correspondents on the subject of architectural education, the main point being that the student can be taught to become a creative designer whilst still at school, and that the products of his labours will be works of art. This is agreed to generally, but nothing is attempted encouraging the individuality of design and thought; rather to contradict it with the "group," for the establishing of groups is the declared aim of some schools of architecture. Harking back to Walter Gropius, that "the art of building is contingent on the co-ordinated teamwork of a band of active collaborators whose orchestral co-operation symbolises the co-operative organism we call Society," I cannot agree with Mr. Raglan Squire that within the training period the five years should be equally divided between day school instruction, work in an office, and site experience. Five years is only just enough to cover the subject of design, and I believe that not with all the practical knowledge in the world can a work of art be produced, for surely, if practical experience was enough to produce a work of art, where would we draw the line between the architect and the building surveyor?

To-day, many instructors in the schools of architecture, and indeed practising architects, have not learnt the lesson of Victorian architects that architecture should not be entangled with morals and politics. The Victorians looked at the Renaissance and condemned it because in its origin, the Greeks and Romans used slave labour, and that it was the architecture created by pagan societies. We still hear people condemn Georgian art and architecture, on the grounds that the majority of the people were living under appalling conditions, with long hours of work and little monetary reward.

So few people can afford, or are interested enough to commission or patronise works of art. To-day, the chief instigators of art and architecture are the various local authorities. Homes must be provided for the people, quickly and economically; but in years to come will the councils' answers to this need be judged by people who will first study the cost of erection, cost of labour, and the cost of materials of the buildings? Do people seriously look at a Georgian house and despise it simply because of the social status of rich and poor at that period? I think not, for one sees beauty, a work of art, and nothing can alter that fact!

If a creative designer can instil life into matter, surely the material he uses is irrelevant: a work of art will be the result. This means that economics cannot be an excuse for bad design. I believe the test of time will compare the majority of contemporary architecture with the rows of dull Victorian dwellings that exist in every town in this country.

The "moderns'" slogan that if the structure of the building is expressed truthfully, a work of art is produced, is the excuse for so much bad building; and the premise that form follows function is resulting in too many buildings being erected without unity of form or elevations, and certainly not works of art, and that is surely what an architect is for—to produce works of art.

L. RUNDLE [Architectural Student].

3, Clarendon-gardens, London, W9.

## DETERIORATION OF EXISTING HOUSES

To the Editor of *The Builder*

SIR,—Mr. A. E. Telling's useful article "Some Facts About the Housing Situation" in your issue of August 14, has done good service in collating much of the evidence on the housing problem. I hope, however, that you will allow me to correct one point.

Mr. Telling says that this Federation "suggested" that something like 200,000 houses had been going out of occupation every year, and that that figure was increasing rapidly.

The Federation has never advanced this figure on its own authority, though it believes it to be true. All the Federation did in its Memorandum to the Minister was to direct his attention to the following statements:—

MR. CHURCHILL, in the House of Commons, November 6, 1950:

"The prime basic fact which stares us in the face to-night is that building at the rate of 200,000 a year in no way solves the problem. We do not make any progress with rehousing the people. We only keep level with houses which are already falling or have fallen into decay."

MR. ANEURIN BEVAN, in "Why Not Trust the Tories?", published in 1944:

"Even before the war we needed a replacement programme of 200,000 houses a year. In addition to the cessation of building, the enemy has destroyed or seriously damaged more than a million houses. That estimate was made before the fly-bomb attacks. The position has become worse since then. Even to climb back to the housing position we had reached before the war started—and you know how far from satisfactory that was—we require a minimum of four million new houses."

MR. ERNEST MARPLES, in his pamphlet "Housing," published in 1951:

"The hard fact (as stated by Mr. Aneurin Bevan himself) is that 200,000 houses become obsolete each year in this country. If only 200,000 new houses are built every twelve months we do no more than replace those which, he said, fall into decay."

These statements were subsequently supported by the Sanitary Inspectors' Association which, in a Memorandum on Rent Restriction published in November, 1951, said:

"In the case of most large towns, figures are available to show that the annual wastage substantially exceeds the new accommodation made available under the house-building programme."

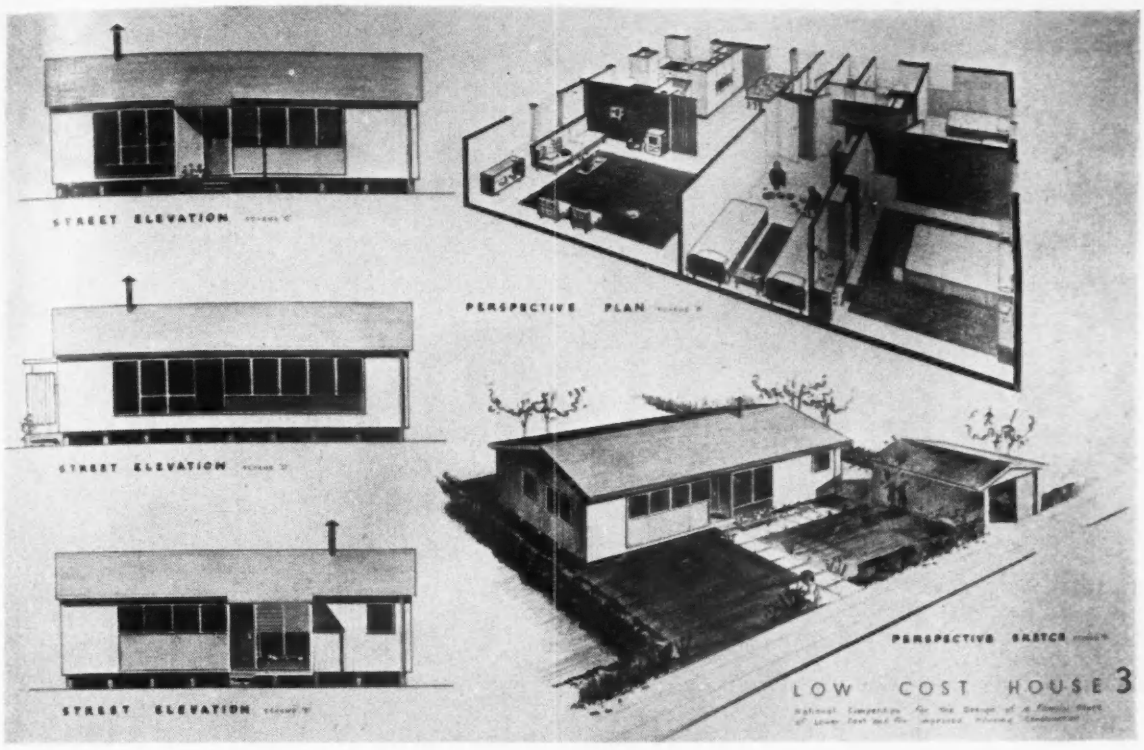
So far as I am aware, these statements have never been withdrawn and, until better evidence is available, they must still be given attention.

In any case, there is no doubt that the growing deterioration of existing houses is a grave problem fully deserving the attention which *The Builder* gave to it in publishing Mr. Telling's interesting article.

A. G. ANDERSON, President, National Federation of Property Owners.

St. Stephen's House, Westminster, SW1.

*** The Rent Reform Committee's proposals for checking the deterioration of old houses are summarised on page 366.

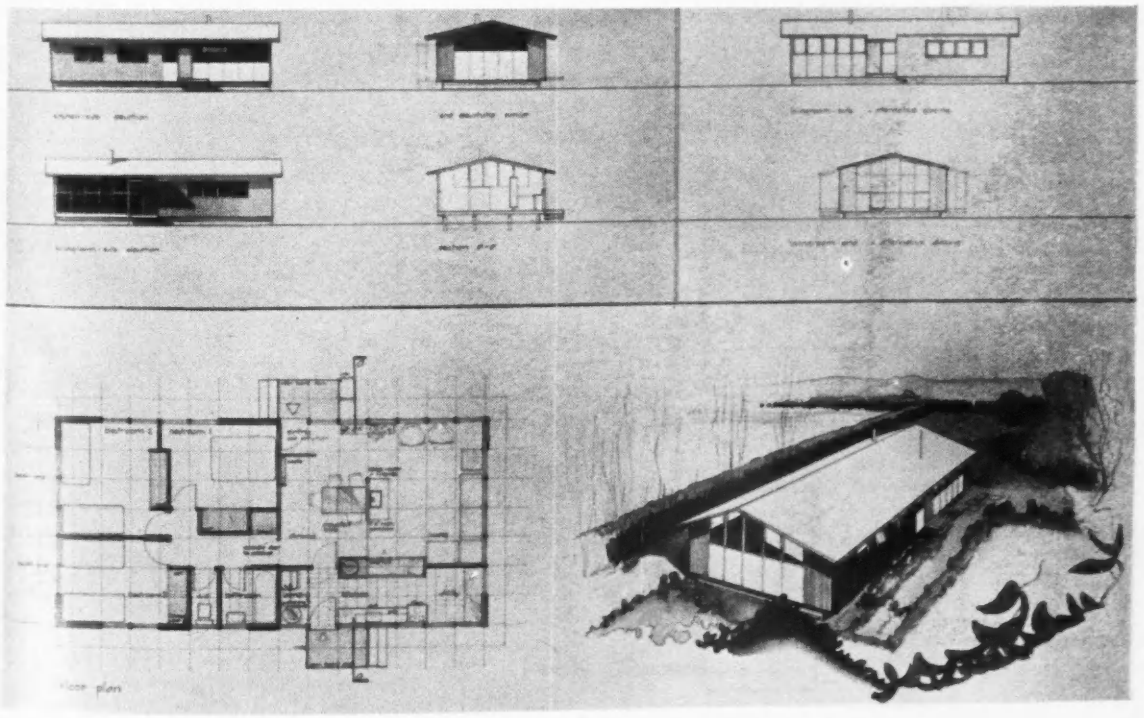



*The design placed first. Architect: Mr. Keith Cooper, ARIBA.*

# *LOW-COST HOUSING IN NEW ZEALAND*

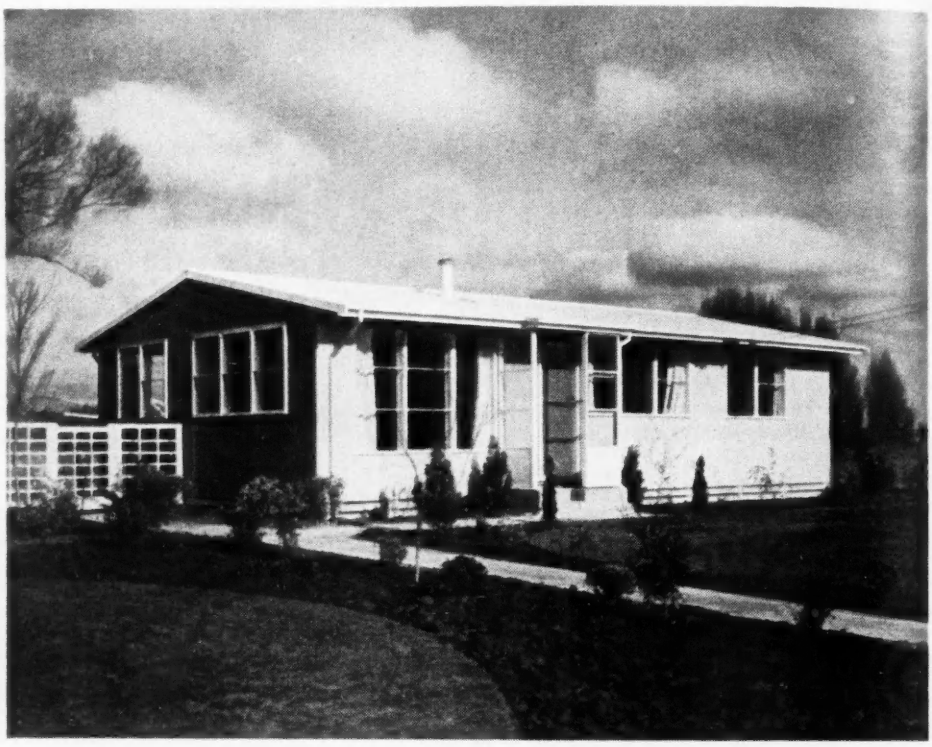
## *Winning Competition Designs*

THE accompanying illustrations show the designs placed first and second in the New Zealand low-cost housing competition, the results of which were given in our issue of August 14. The competition judges in their report stated that a feature of the winning design by Mr. Keith Cooper, ARIBA, was the seclusion of the living-room, which had no outside entrance. The area of the house was just over 900 sq. ft. in which there were three bedrooms, a kitchen, a dining-room, and living-room. The placing of the kitchen provided excellent working space free from family traffic, a desirable feature in a family home. There was ample cupboard space within easy reach of the house-



*The design placed second. Architects: Messrs. Patience and Gabites.*

## *New Zealand Government Architect's Design*



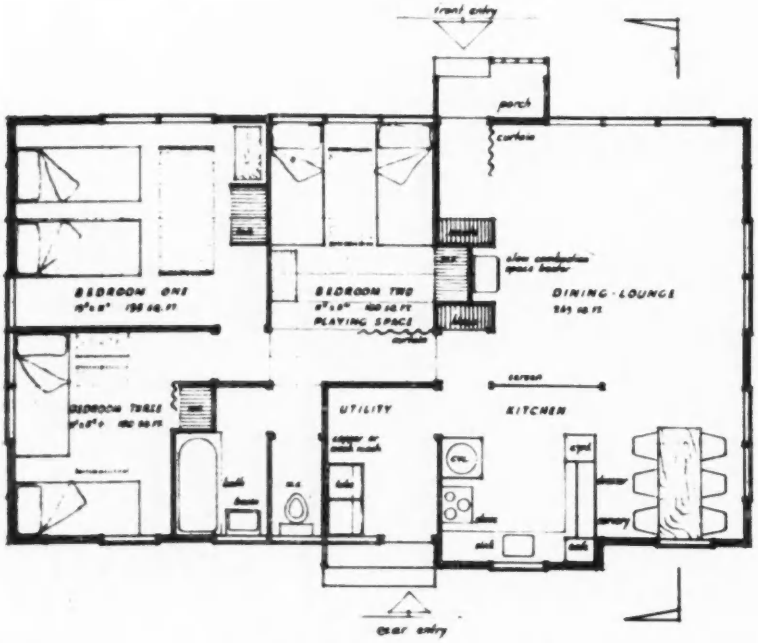
*Example of a low-cost house designed by Mr. R. B. Hammond, Director of Housing Construction.*

wife and easy access was provided to both the dining- and living-rooms. Skilful placing of the flue of the space heater provided a well-heated linen cupboard. The outside appearance of Mr. Cooper's house was pleasing (the report continues), and the details given indicated considerable skill in design. Constructional details were excellent and provide for methods which considerably assist in producing a low-cost house. A major feature of the second prize-winning design, that submitted by Patience and Gabites, was the large central area provided for general family living, with special regard for children.

"In many ways this plan has the most interesting and economical development to meet the changing requirements of a growing family," the official report stated. "The three phases illustrated provide for early years, crowded years, and later years. The first phase provides accommodation for five people, with final accommodation for seven people."

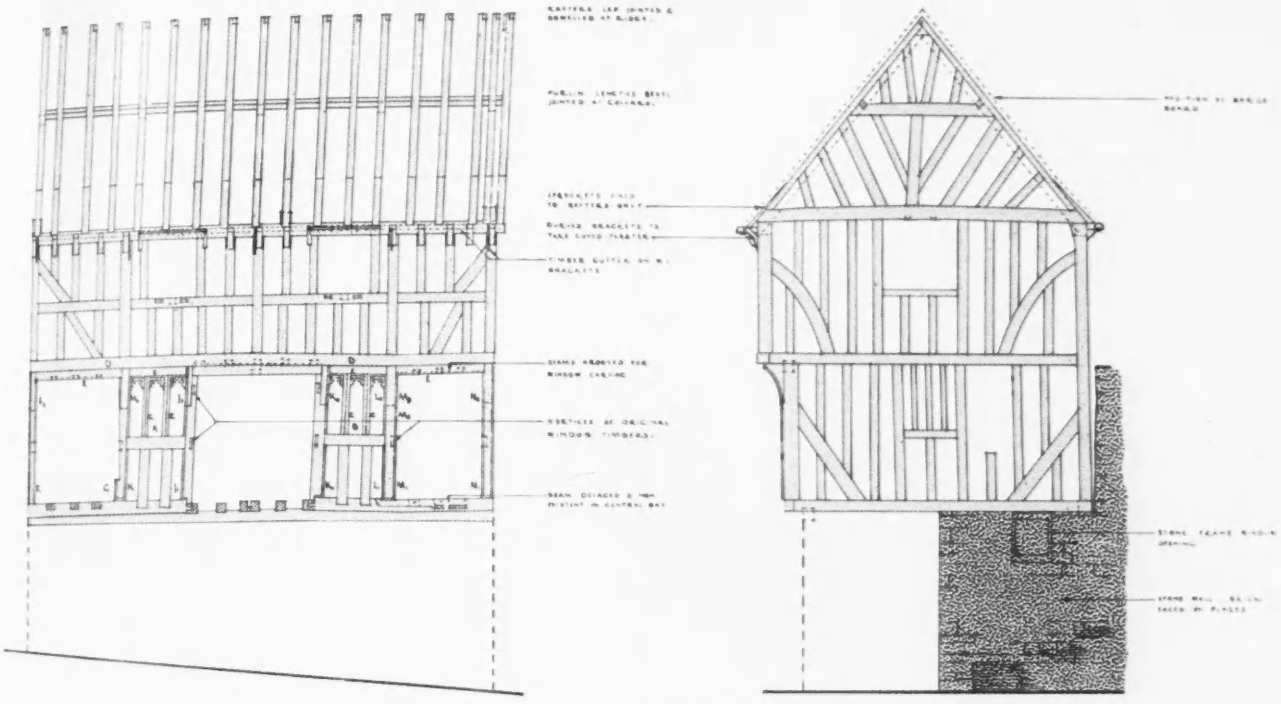
In the design which won the third prize the combination of dining and living spaces had resulted in a long and comparatively narrow plan which was not the most economical form, the judges commented.

The judges stated that a large number of entrants eliminated the traditional New Zealand laundry and incorporated washing-machines in the kitchen, bathroom, or part of the rear entrance porch. Others sought economy by including a central service unit and arranging living spaces and bedrooms round it.




*Plan of the "Hammond" house.*

## *LOW-COST HOUSING IN NEW ZEALAND*



*The timber-framed structure before restoration.*

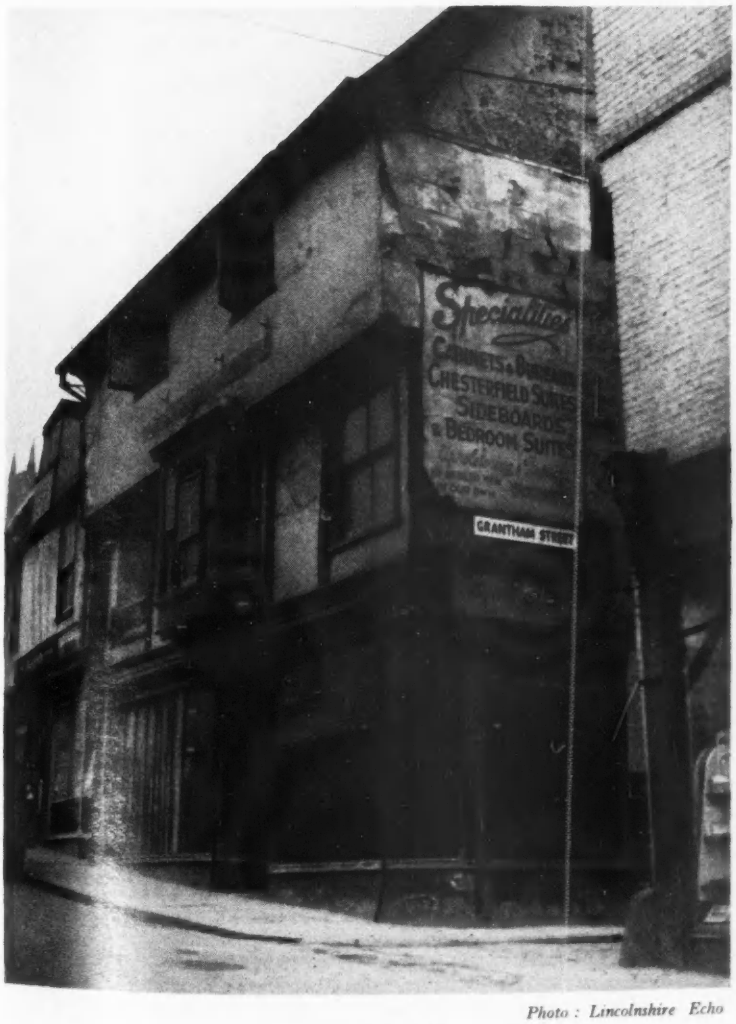



*Photo : Lincolnshire Echo*

*Before restoration.*

# *THE CARDINAL'S HAT, LINCOLN*

## *Restoration of a Fifteenth-century Building*

*Architects*

*WATKINS, COOMBES AND PARTNERS, F/AA.RIBA*

*Builders*

*C. R. LUCAS & SON (LINCOLN), LTD.*

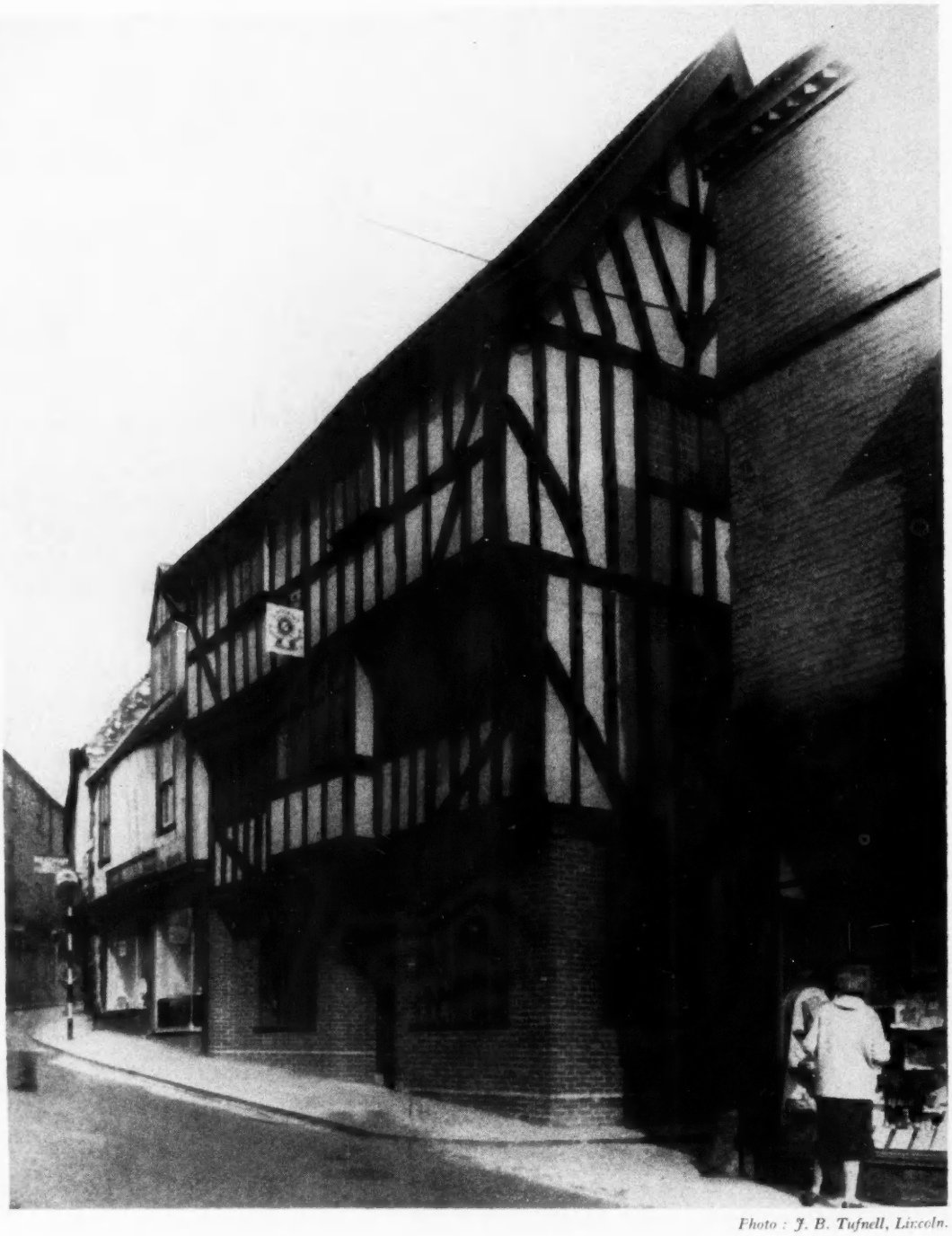


*Photo : J. B. Tufnell, Lincoln.*

*THE CARDINAL'S HAT, 268, HIGH STREET, LINCOLN: AFTER RESTORATION*

THE building known as the Cardinal's Hat in High-street, Lincoln, dating, it is believed, from about 1480, was originally a house belonging to the Dean and Chapter of Lincoln. By 1521 it had apparently become an inn, and it is thought that the name was given in compliment to Henry VIII's minister, Thomas Wolsey, who was Bishop of Lincoln in 1514-15, and made a cardinal in the latter year. By 1801 the house had ceased to be an inn and was let off in rooms. The Ecclesiastical Commissioners sold the freehold in 1872. Through the course of the centuries the building was a good deal altered and added to, but much of the original work remains, particularly the medieval timber framing of the front part, which had long been hidden away behind a plaster facing.

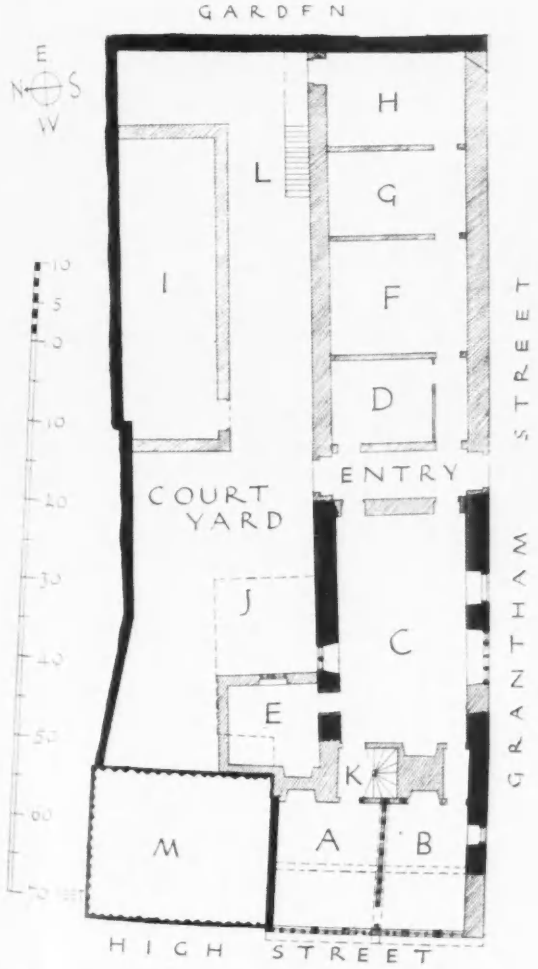
The work of restoration started in a modest way with a request by the St. John Ambulance Brigade for a report on the property, in order to ascertain

*Photo : J. B. Tufnell, Lincoln.*

*Timbered roof of hall (top floor).*

KEY TO PLAN—GROUND FLOOR

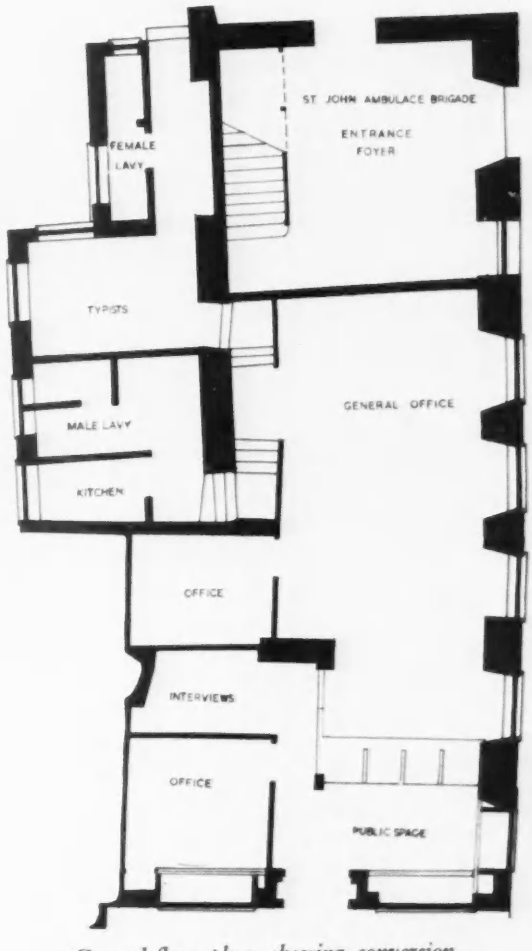
A, B Parlours next to street.
C Hall.
D Buttery.
E Inner parlour.
F Kitchen.
G Brewhouse.
H Beerhouse.
I Stable.
J Position of northern wing as rebuilt in XVIII/XIX century.
K Stairs ?
L Stairs ?
M Adjoining tenement.




*Ground plan, c. 1616 (Hatched parts conjectural).*

whether it could be altered and repaired economically for their use as County and Lincoln Corps Headquarters. A full report was submitted, estimates were prepared and a sum of £2,650 was given to cover the essential items of re-roofing, replacing defective floor and ceiling rafters, hacking off defective plaster and replastering, the removal and replacement of the rotten ground floor and panelling and certain internal partition work. The report also drew the attention of the then potential purchasers to the fact that half-timber work was hidden behind a mask of plaster, but financial considerations prevented their undertaking further commitments at this stage.

The work of the essential repairs then started, but in the course of removing some plaster from the front wall some beautiful windows with cinque-foil cusping were unexpectedly revealed, which gave promise that work of unusual interest lay behind this mask. The Corps was then faced with the question whether to bear the extra cost of restoring this facade while the scaffolding was in position. Fortunately by now local interest was so roused that several charity trusts came forward with generous offers, and so it was decided to strip the facade completely, and the skeleton shown on the drawing was then revealed. At the suggestion of the City Planning Officer and the secretary of the




*Ground-floor plan, showing conversion.*

Lincoln Archaeological Society an invitation was sent to the Ancient Monuments Department of the Ministry of Works to inspect this building, and a visit was paid by HM Inspector of Ancient Buildings, who added his enthusiastic support and whose advice was followed in the course of the restoration.

The whole of the building above the ground-floor ceiling, although spoiled by the insertion of sash windows, gave sufficient evidence to reconstruct with tolerable assurance as to its original condition.

On the High-street facade the two upper storeys projected in a series of jetties over the pavement, as the photograph shows, and mortice holes in the second-floor jetty beams clearly indicated a central oriel window. Although the first-floor beams had been sawn off on the line of that jetty beam, the Ministry of Works representative was convinced that this floor had originally been cantilevered out to the face of the oriel, and so it was restored. Likewise clear evidence was found that the small oriels to the second floor had projected at cill level. The windows in the end wall were designed to fit what was assumed to be the original openings, although this was partly conjecture. The infilling between the timbers was made with two thicknesses of wood wool and the gaps in the facade left by the later sash windows were filled with oak studs from other dismantled buildings and treated to match the original wall. Gaps in the line of traceried windows were similarly filled with new tracery to match the original alongside.

The old oak floor beams over the front portion were generally in good condition, but varied very much in level, so these were packed up to form a level floor. The staircase was not original and was in a poor state of repair, so a new oak staircase was designed to serve the upper floors, and the miscellaneous collection of doors, not one of which was original, was replaced by a new set in oak framing and boarding in keeping with the rest of the interior.

The section of the building behind the front rooms was originally built of stone walls 2 ft. thick, much of which still remains. On the ground floor new large oak windows were needed to give natural light to the offices, and where in the past old openings had been filled with brick, this was replaced with stone from the new openings and backed with brick. On the ground floor so much had been altered that it was not possible to be certain how it was constructed. The massive stone walls of the rear of the building led to the belief that it must have been of stone also, but it was decided to produce a frankly new design in hand-made 2-in. brick with oak display windows divided into panes in sympathy with the rest of the facade without any attempt at reconstruction. The display windows are to serve the new tenants, the Halifax Building Society, for whom an oak veneer panelled interior with no attempt at a period design has been arranged. The roof over the front rooms was of stout oak beams all in a remarkably fine state of preservation, but that over the back portion had suffered severely from decay, and many of the rafters had been replaced with larch or fir. This section was originally floored at the tie-beam level to form an attic storey. The old reed floor was removed to form one large hall with an open roof. To restore this roof completely, new principal trusses and purlins were fitted and the common rafters were made up of the original oak timbers jointed at the purlins.

It will thus be seen that the policy was not to attempt a reconstructed ground-floor elevation where no positive evidence was available, but only to reconstruct where old original work could be preserved and replaced.

There are many other buildings in this old city worthy of such preservation to the common delight of all, in consequence of which a Civic Trust is now in course of formation to tackle, amongst other activities, such works.

So much enthusiasm amongst the members of the Brigade was raised that most of the clearing away and "dirty" work was voluntarily carried out by them in the evenings under the unfailing keenness and energy of their president, whilst the skill of the joiners of the contractors concerned, was exercised to the full, finally restoring to the city one of its original gems.

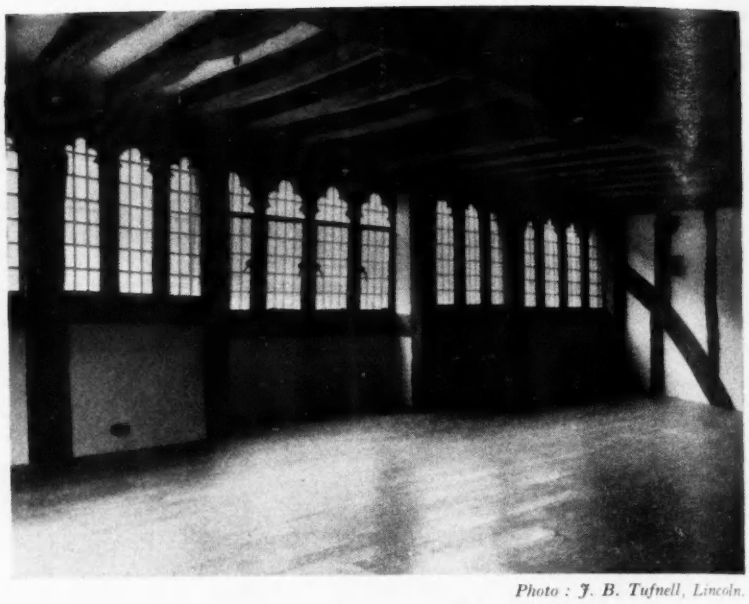


*Photo : J. B. Tufnell, Lincoln.*

*"The Greate Chamber" (first floor).*

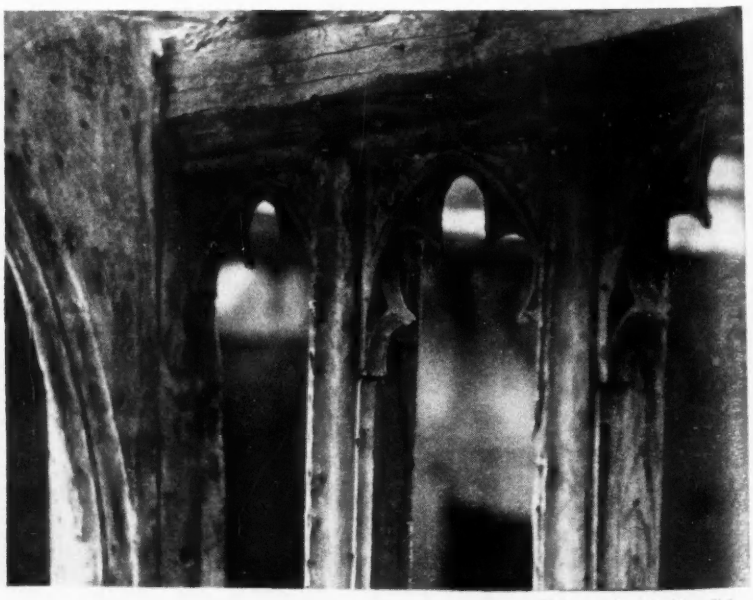
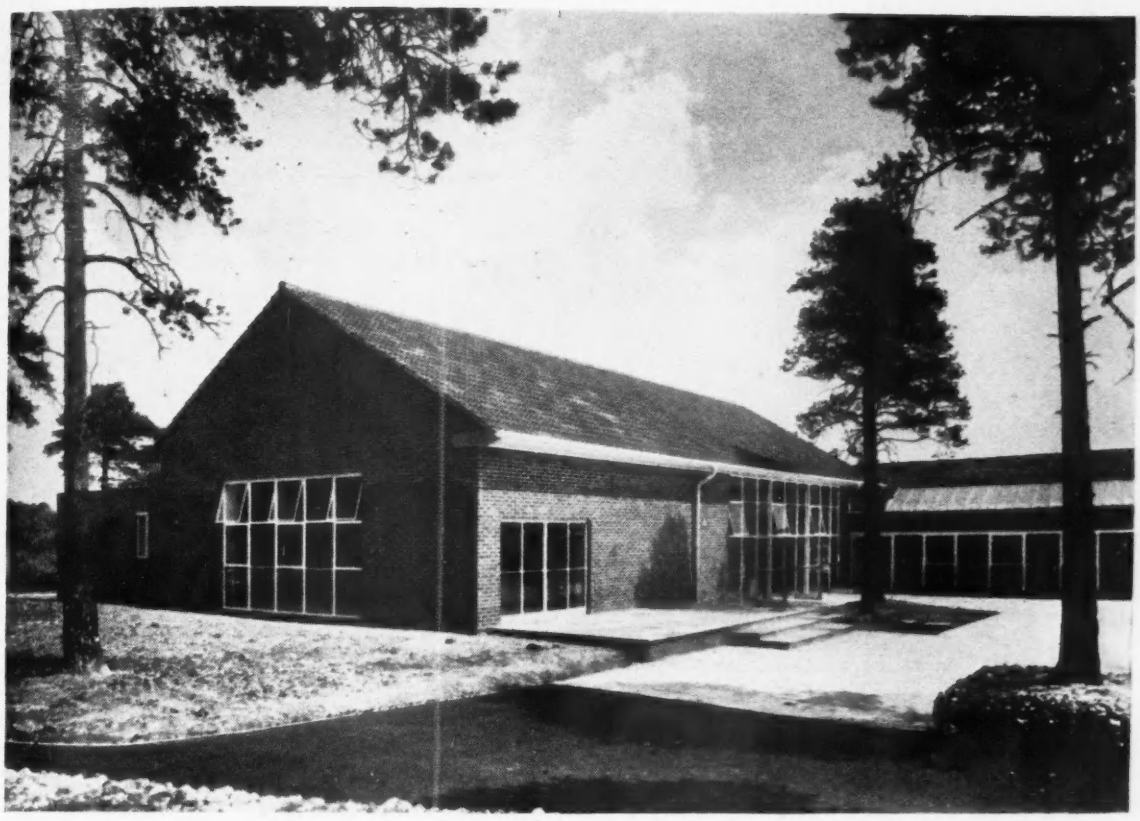


*Photo : Lincolnshire Ech*

*Original three-light window.*

*THE CARDINAL'S HAT, LINCOLN*



*View of combined stage and dining-room in the foreground.*

# *West County Primary School, Sheerwater, Surrey*

*Architects*
*YORKE, ROSENBERG & MARDALL, FF./ARIBA, IN COLLABORATION WITH J. HARRISON, ARIBA, COUNTY ARCHITECT, SURREY*

*Associate Architect*
*I. B. WILSON, ARIBA*

*Assistant Architect in Charge*
*I. MARDI*

*Consulting Engineer*
*O. M. MARCEL*

*Quantity Surveyors*
*LEMON & BLIZZARD*

*Builders*
*R. B. BURDEN, LTD.*

*Main entrance with administration rooms over boiler house to the right.*

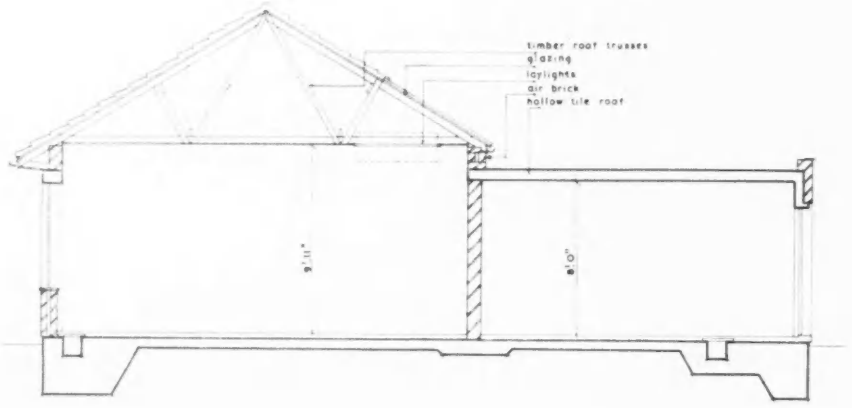
THE school lies within the LCC housing estate at Sheerwater, near Woking. It is intended for 280 juniors and infants, although this number will be greatly exceeded.

An attempt has been made to preserve as many trees and shrubs as possible on the site.

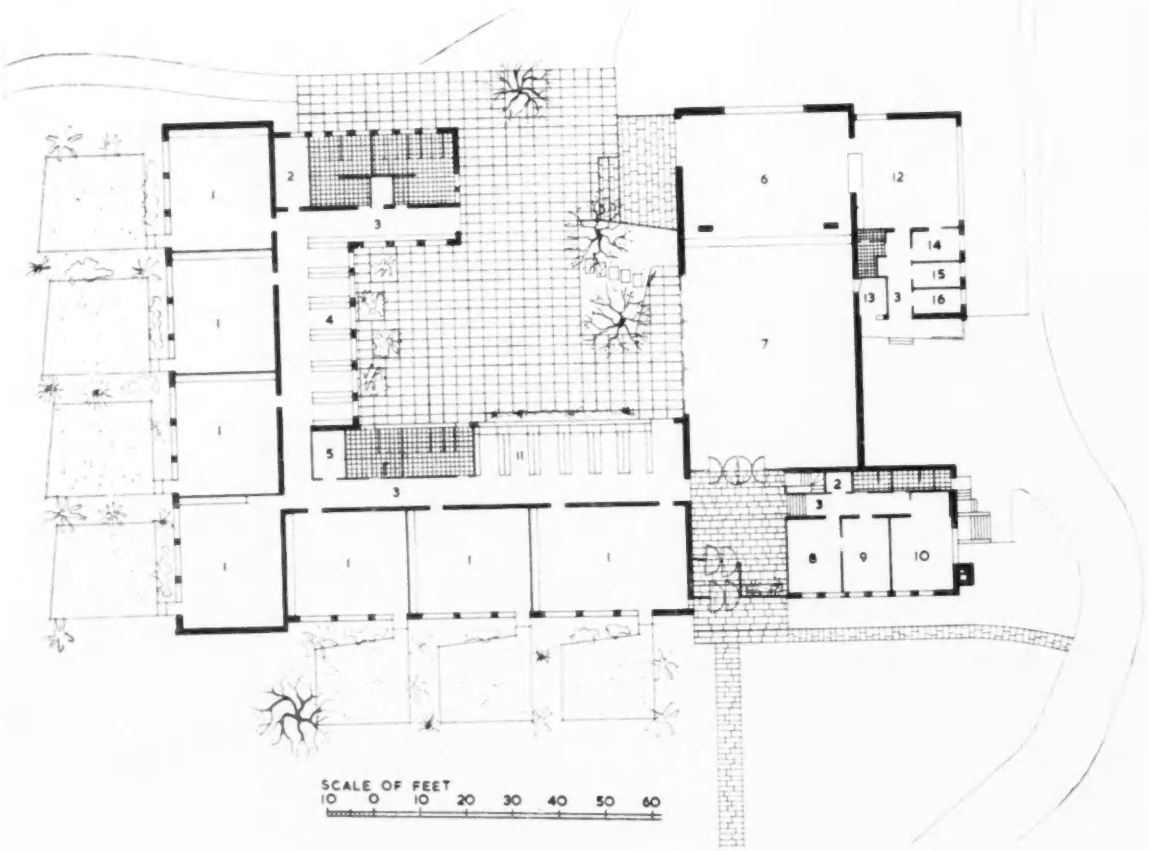
The school is built mainly in traditional materials, load-bearing brick walls with a timber and pantile roof. Secondary lighting to classrooms is obtained through double-glazed laylights, the inner layer of glass is flush with the fibreboard ceiling. Through ventilation is obtained with the aid of adjustable ventilators in the back wall.

The flat roofs over corridors are in hollow tile with a three-ply bitumen felt and a finish of granite chips.

Floors to assembly hall and dining-stage are wood block, to kitchen quarry tile and corridors accotile.

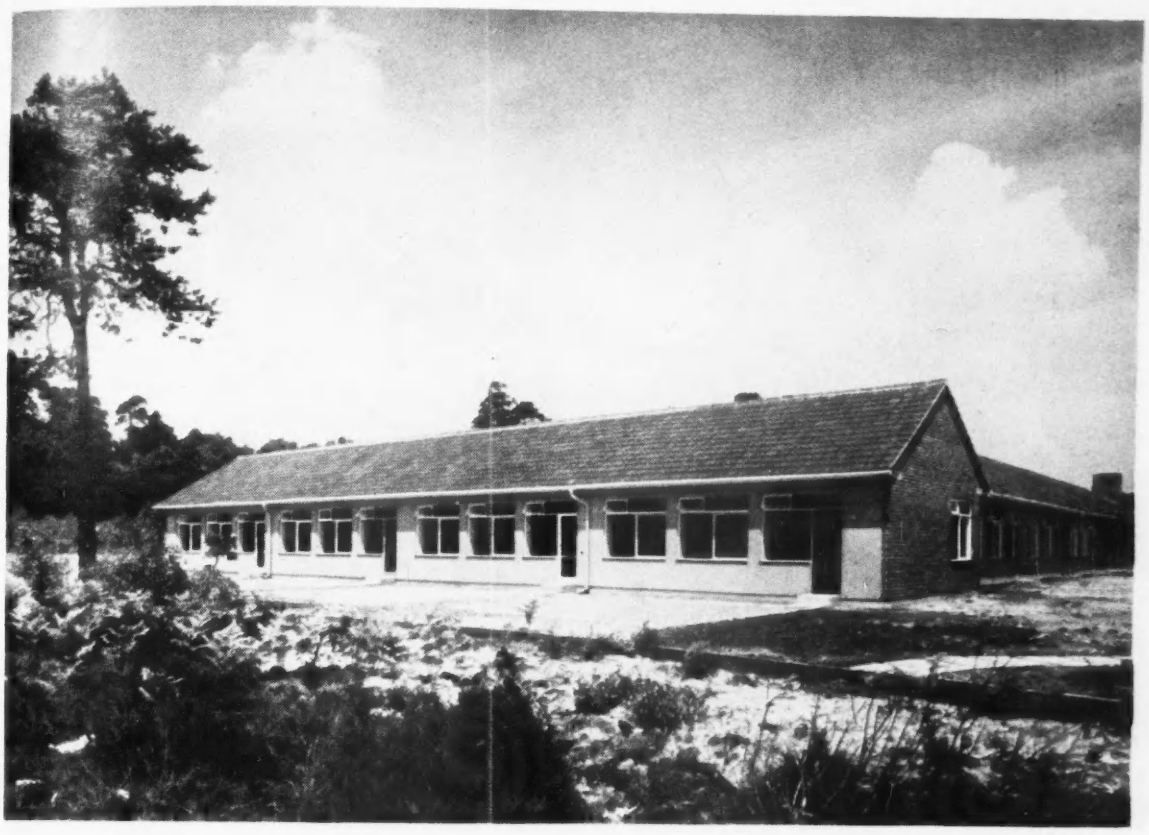



*Cross section through classrooms and girls' coatroom. Below. Plan.*

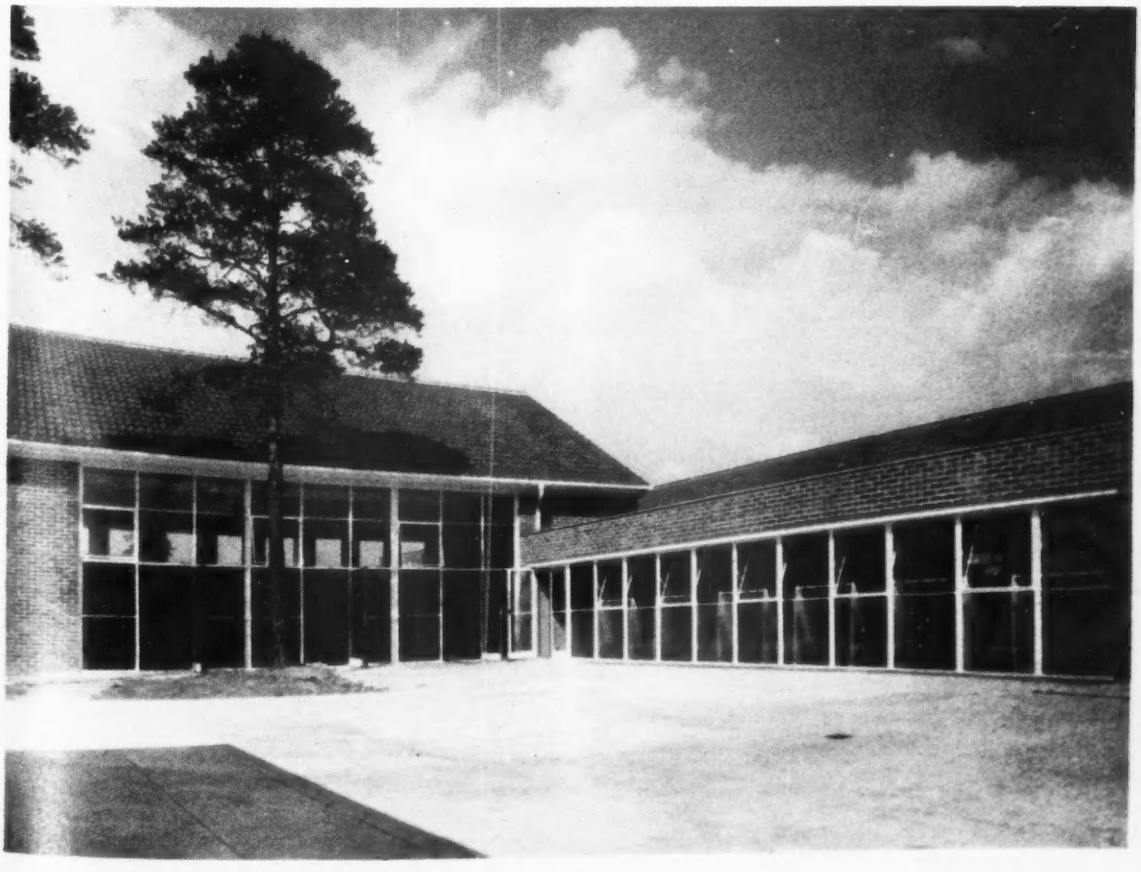



KEY TO PLAN

1 Classrooms.
2 Stores.
3 Corridor.
4 Girls' Coats.
5 Drying Room.
6 Dining-Stage.
7 Assembly Hall
8 Office.
9 Head.
10 Staffroom.
11 Boys' Coats
12 Kitchen.
13 Caretaker.
14 Veg. Store.
15 Larder.
16 Dry Store.



*View of classroom block facing south-west. Below : Assembly hall and coatrooms.*



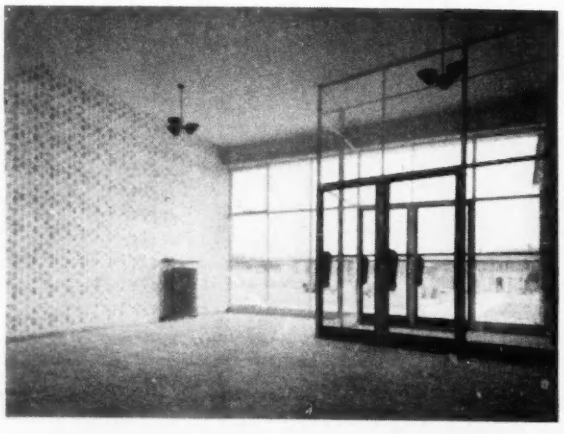
*Assembly hall.*

The classroom floors are linotile, lavatories concrete tile and stores are granolithic.

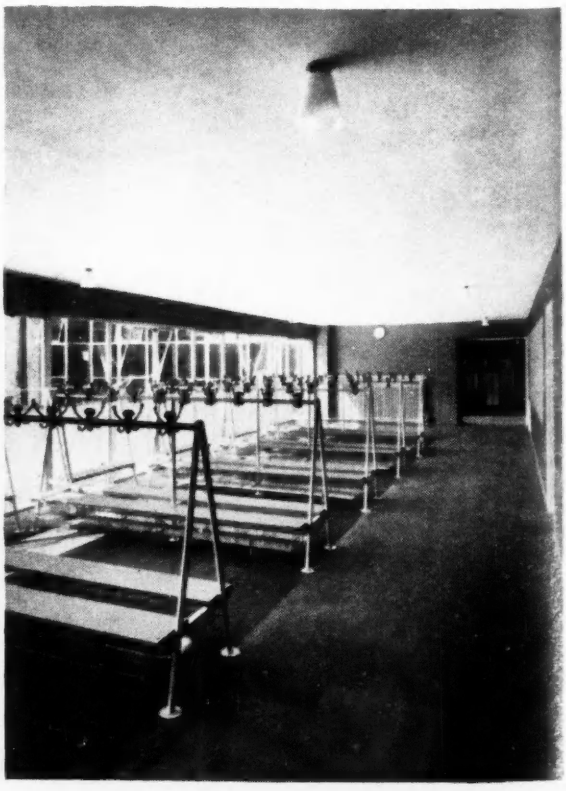
The construction was started in June, 1952, and finished within one year. Following is a list of sub-contractors:

Lino floor, Cellulin Flooring Co., Ltd.; concrete tile paving, Moordon Tile Products, Ltd., Penistone, Yorks; asphalt tile paving, R. W. Brooke and Co., Ltd.; terrazzo work, Malacarp Terrazzo Co., Ltd.; tanking to boiler house, Excel Asphalte Co., Ltd.; bituminous felt roofing, F. McNeill and Co., Ltd.; woodblock flooring, Vigers Bros., Ltd.; structural steelwork, Boulton and Paul, Ltd., Norwich; metal windows, Williams and Williams, Ltd.; fibrous plaster, H. E. Gaze, Ltd.; glazed tiles, Parkinsons (Wall Tiling), Ltd.; heating, h.w., and gas services, C. B. Jackson and Co., Ltd.; electrical installation, Alpha Manufacturing and Electrical Co., Ltd.

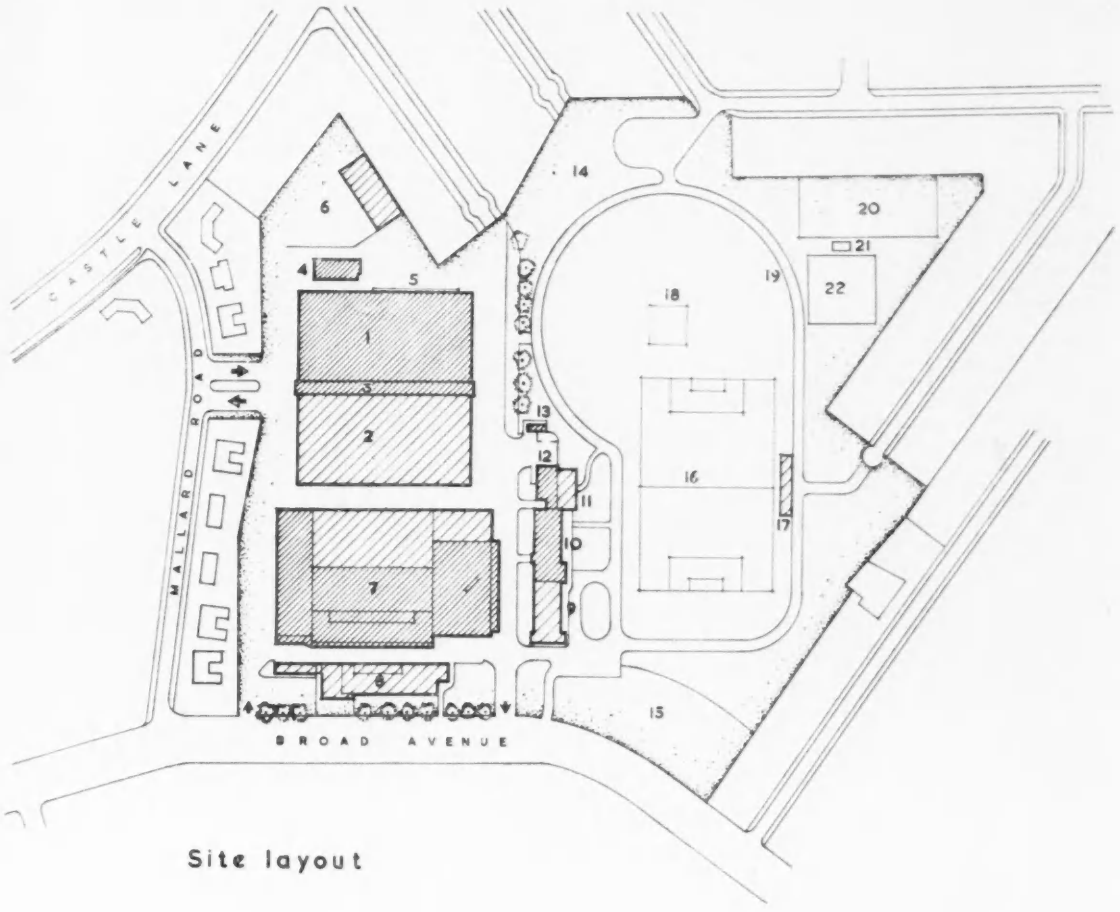
## *WEST COUNTY PRIMARY SCHOOL, SHEERWATER, SURREY*



*Entrance hall. Honiton stone floor; wall papered.*



*Combined coatroom and corridor.*




Site layout

# CASTLE LANE TRANSPORT DEPOT

## *for the County Borough of Bournemouth*

*Architects*
*JACKSON & GREENEN, F/ARIBA, AMTPI*

*Consultant Structural Engineers*
*R. TRAVERS MORGAN & PARTNERS*

*Consultant Mechanical Engineers*
*J. STINTON JONES & PARTNERS*

*Quantity Surveyors*
*CROOT & PARTNERS*

*Clerk of Works*
*E. HARRISON*

*Resident Engineer*
*H. R. HOMEWOOD, MIMunE*

*Joint General Foremen*
*ROBERT MOGG, ROBERT HAWKINS*

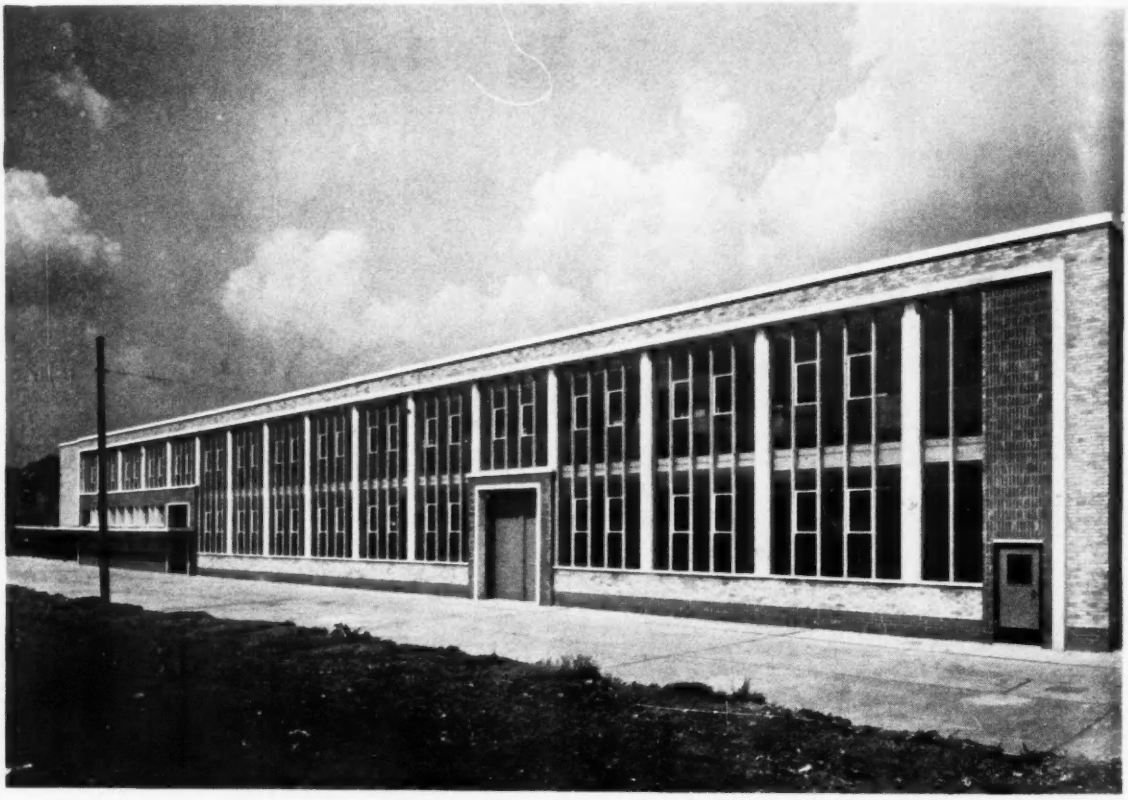
*Builders*
*JAMES DREWITT & SON, LTD.*

KEY

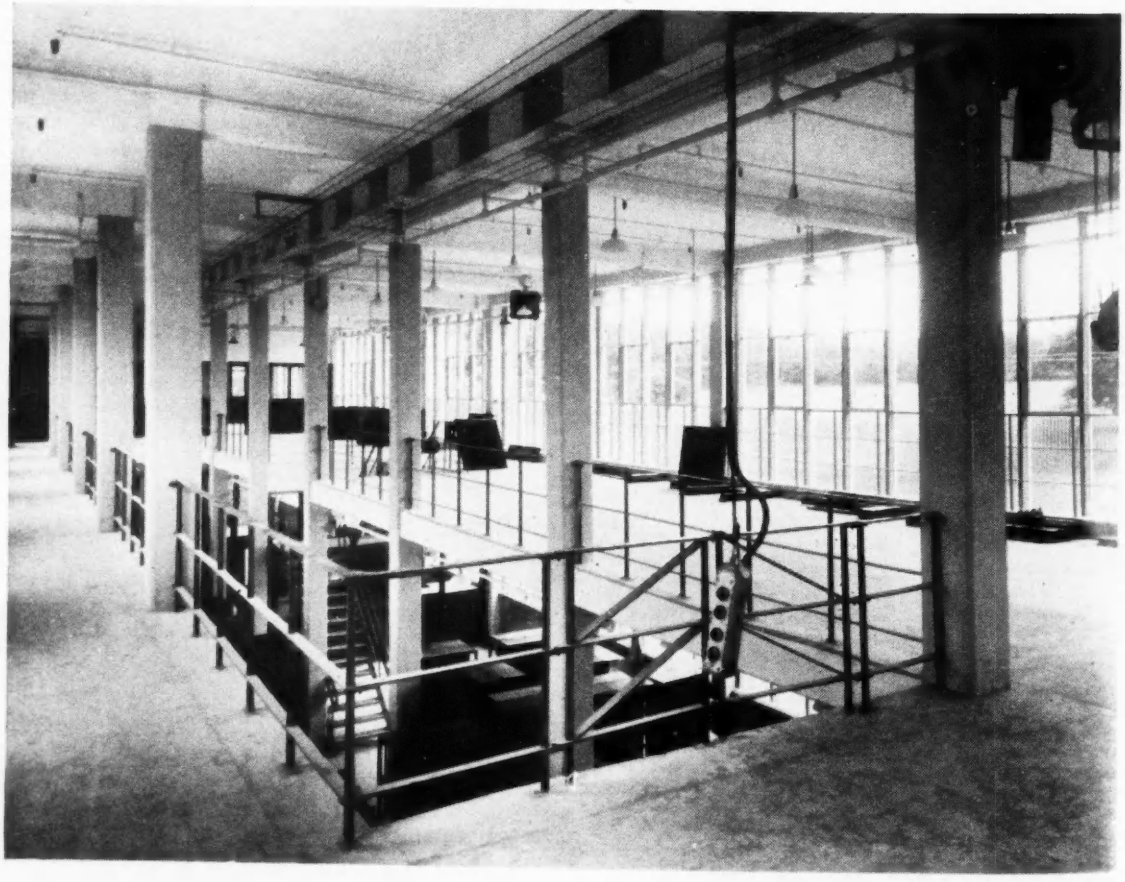
1 No 1 Garage
2 No 2 Garage
3 Offices block
4 Wash building
5 Fueling position
6 Overhead department
7 Maintenance works
8 Offices
9 Assembly hall
10 Canteen
11 Sports pavilion
12 Boiler house
13 Sub station
14 Childrens play corner
15 Transport department workers housing
16 Football pitch
17 Stand
18 Cricket pitch
19 Training track
20 Tennis courts
21 Pavilion
22 Bowling Green

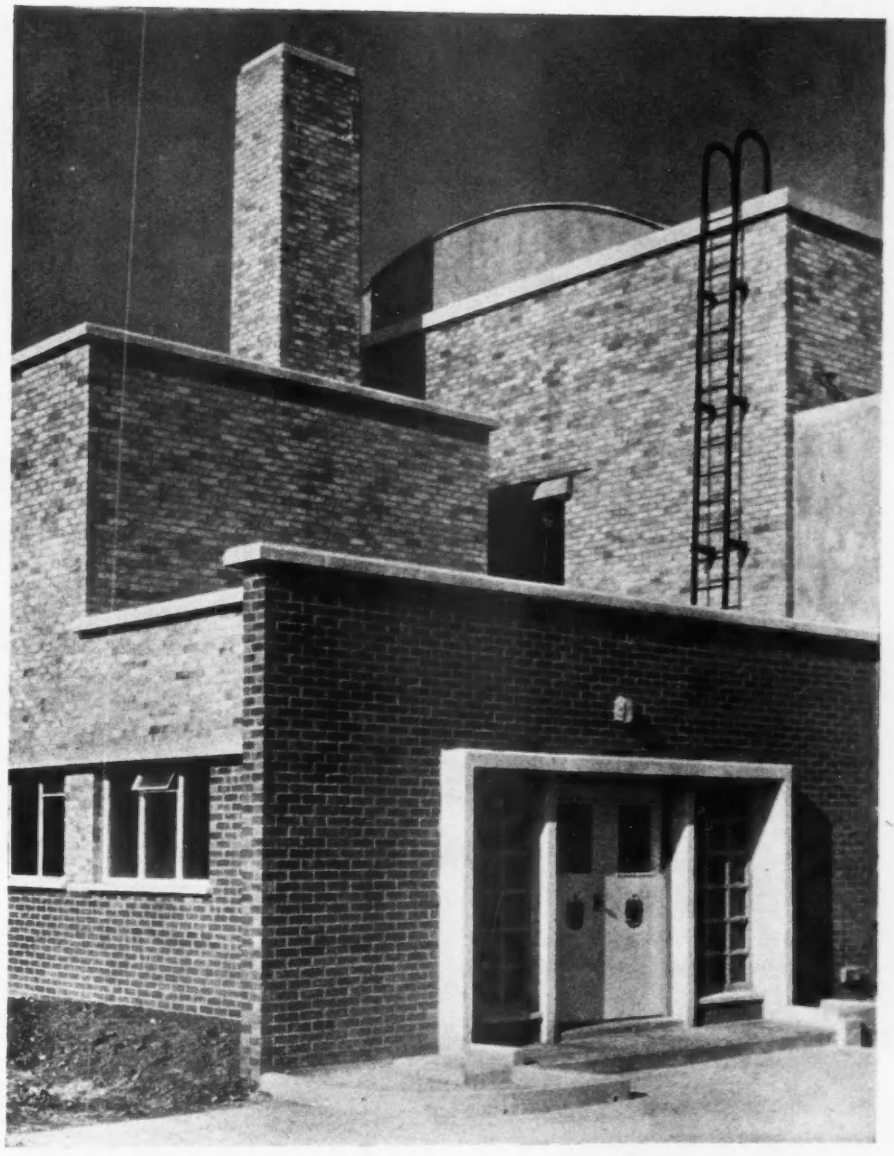
Present programme

Future buildings and extensions



*The workshop block (part of main front). Below : Upper floor of workshop block.*





*Staff entrance to a garage block.*

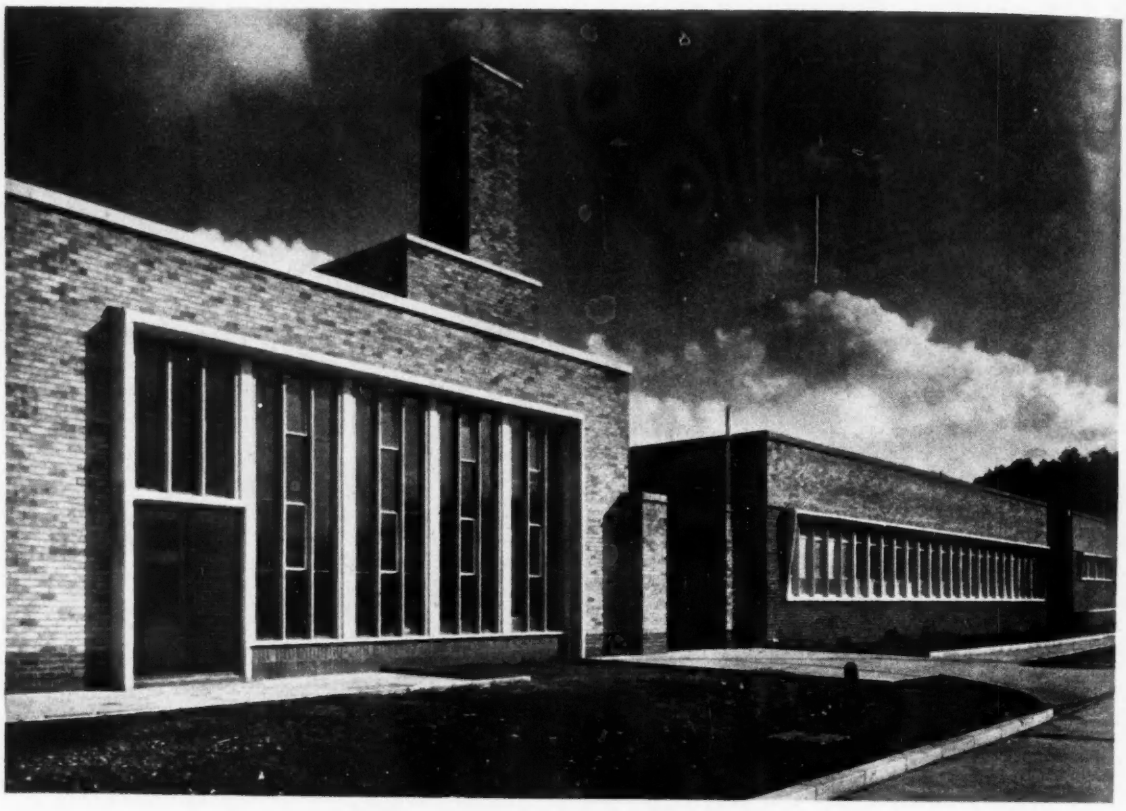
FOR many years past the Transport Department of the Bournemouth Corporation had been working under considerable difficulties so far as the maintenance of their fleet of buses was concerned. The new depot will solve this problem and also provide accommodation for the growing transport fleet.

The buildings were originally designed as steel-framed with an estimated steel requirement of 634 tons, but the Ministry of Transport condition necessitated research work with a view to reducing this total. Reinforced concrete, prestressed concrete and aluminium were all considered as alternatives to steel-framing, and finally it was decided that a combination of reinforced and prestressed concrete would effect the greatest saving of steel—the actual saving compared with steel framing being approximately 416 tons.

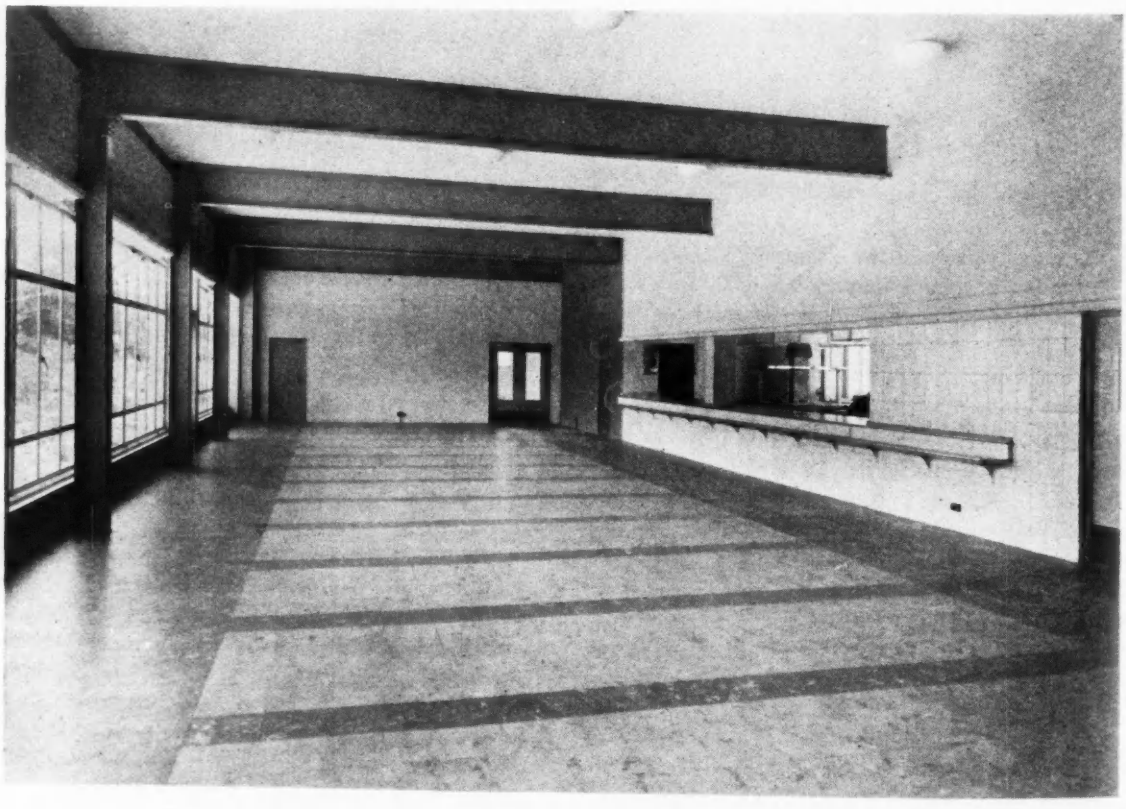
The plans were prepared with a view to the work being carried out in sections spread over a number of years and to be readily extended with the growth of the fleet of vehicles. The maintenance workshops so far constructed are capable of dealing with the complete maintenance of 240 buses, but the plans have been prepared so that this section may eventually be enlarged to deal with up to 500 buses.

The outline plan on page 351 shows the disposition of the various buildings and indicates those portions that have already been constructed and extensions planned for future construction.

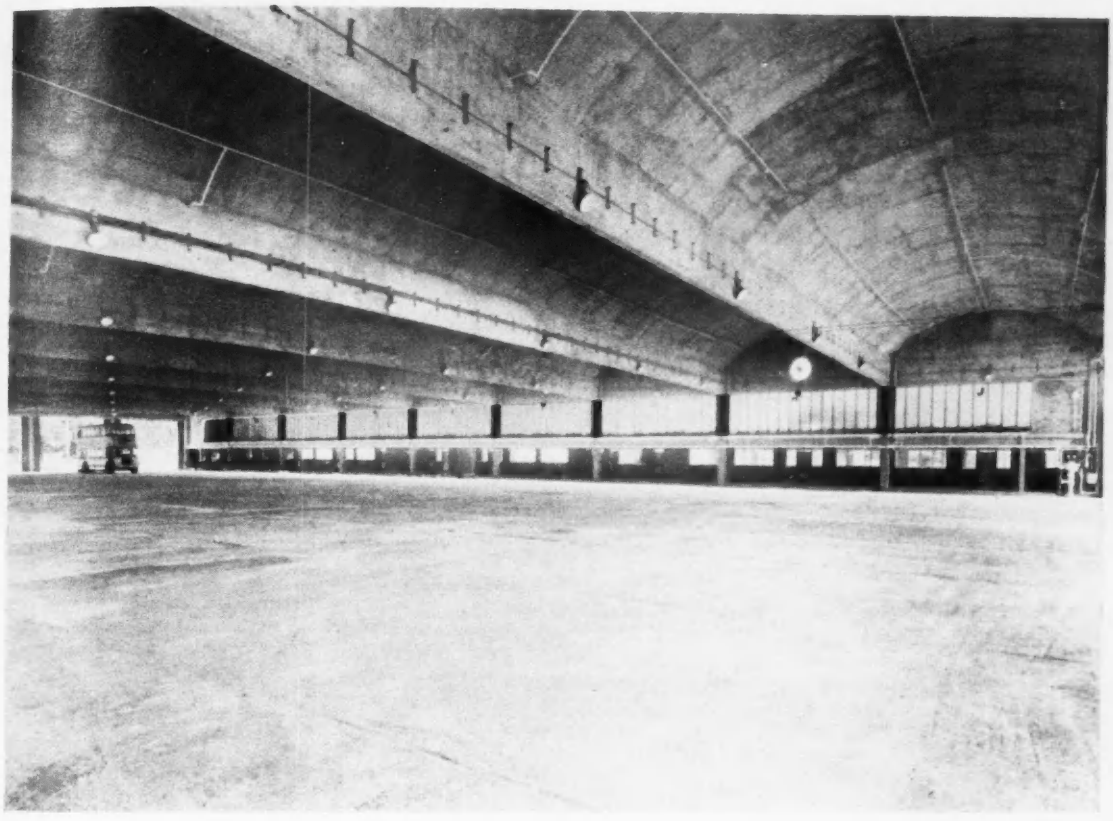
The garage building gives a column-free covered space of 45,000 sq. ft., being 300 ft. long by 150 ft. wide. This span of 150 ft. is the largest yet constructed in this country with prestressed edge beams and shell roof. The roof consists of nine reinforced concrete shells of 2½ in. thickness. The concrete was pressure sprayed by means of the " Gunite " spraying system. There are nine shells with a span of 33 ft. The intermediate beams are alike 10 in. wide and 5 ft. 6 in. deep. The external beams are slightly larger. These beams were cast *in situ* and post-tensioned by the Magnel-Blaton system.

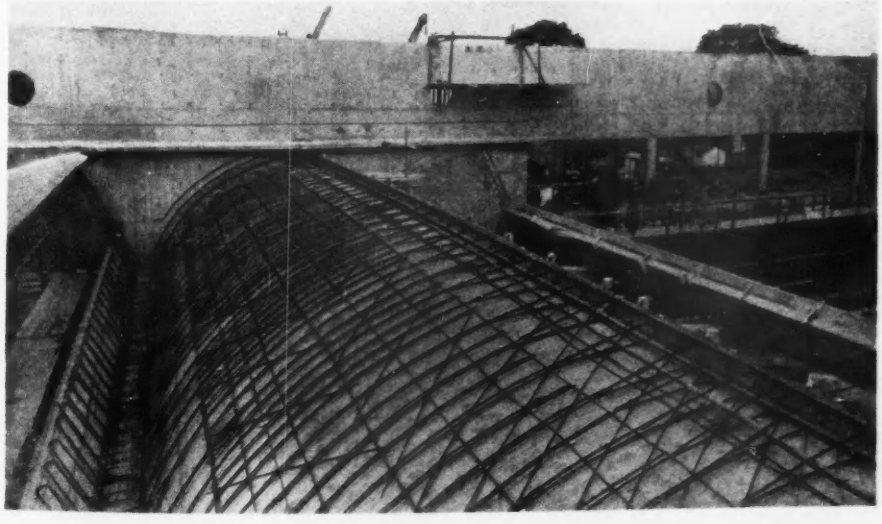


*Canteen exterior and boiler house.*



*Interior of canteen.*





*Interior view of garage. On left: View of part of shell roof, showing the reinforcement and prestressing cables in position. The system used was the Freyssinet.*

With the exception of the outside walls the building is constructed entirely of concrete; thus eliminating all maintenance work which would be required by any other type of building which would involve a steel roof.

An inspection pit tiled with glazed tiles and lighted with fluorescent lighting has been provided, and at one section gallery pits have been formed on either side at convenient level for the easy inspection of electrical equipment of vehicles.

The administration block is constructed on the south-west side of the garage and is designed to accommodate a further similar garage when required. It comprises workshops, tyre store, drying room, conductors' and inspectors' rooms, ablution basins and lavatory accommodation, first aid room, mess-room and its accompanying kitchen.

The workshops, like the garage, is a concrete building and is divided with blocks, viz., maintenance, machine, body and stores. The roof over the workshops consists of 45 half shells with north lights with the exception of the stores block which has a flat roof.

Prestressing has been used in this case, but differs from the garage in that the " Freyssinet " system is used.

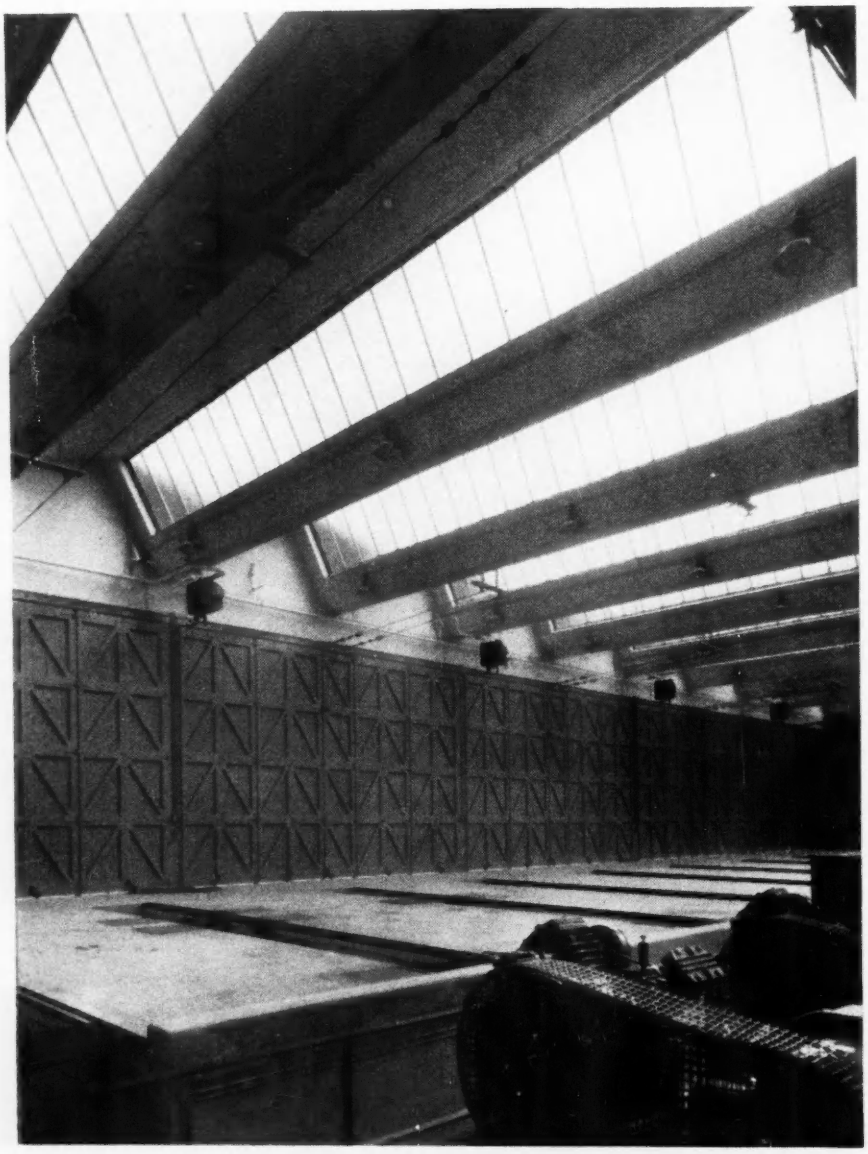
Runways with travelling cranes are provided to carry heavy equipment to such parts of the building as required.

Heating is supplied from the boiler house by means of hot air and is diffused by electrically driven fans thermostatically controlled.

The canteen is a steel-framed structure, the infilling walls being of brick, and is designed to seat 150. Provision is also made for future development such as an assembly hall, sports pavilion, and over the canteen a billiards and games room. Following is a list of the sub-contractors and specialists engaged on the scheme :—

Concrete roads and main drainage, Grounds and Newton, Ltd., Bournemouth ; scaffolding and arc framework, Mills Scaffold Co., Ltd. ; prestressed concrete work, Vibrated Concrete Construction Co., Ltd. ; facing and common bricks and partitions and hollow floor blocks, London Brick Co., Ltd. ; terra-cotta faience linings for inspection pits, Shaws Glazed Brick Co., Ltd. ; sprinkler system, Automatic Sprinkler Co., Ltd. ; electric installation, Aish and Co., Ltd., of Poole.

Ticket and litter removal installation and upholstery cleaning plant, British Vacuum Cleaner and Engineering Co., Ltd. ; garage doors, Esavian, Ltd. ; Glascrete mullion windows to maintenance works, J. A. King and Co., Ltd. ; paints, Docker Bros., Birmingham ; steelwork, J. R. Smith and Sons (Structural), Ltd., Poole ; sanitaryware and ironmongery, Kennedy's, Bournemouth ; cement-glaze finishes, Robb's Cement Enamel Finishes ; accotile flooring supplied and laid by, Southern Tiling, Parkstone ; heating and hot water and ventilation plant, Young, Austen and Young, Ltd., Southampton ; metal windows, Crittall Manufacturing Co., Ltd., Southampton.



*CASTLE LANE TRANSPORT DEPOT, BOURNEMOUTH*

*View in the maintenance pits, workshops.*

# WESTMINSTER ABBEY "IN GRAVE DANGER"

## Urgent Need for Repairs

A WARNING that unless immediate repairs can be undertaken some sections of Westminster Abbey may have to be closed to the public, was given last week by Dr. Adam Fox, Archdeacon of Westminster. He was making a special appeal to the women of Britain to help the £1m. appeal launched by the Prime Minister last January.

Speaking at a Press conference, Dr. Fox said that the abbey was in grave danger.

He continued: Parts of the abbey building are in such a dangerous state that, unless immediate repairs are done, some sections may have to be closed to the public.

Most of the trouble is due to our way of life, to the hazards of the industrial age, which have proved more lethal than time. Most of the corrosion and damage has occurred during the past 100 years. Soot and chemical impurities in the air of cities cling to the stonework and eat into it, destroying the surface. The damage already done is disastrous. Unless you see it for yourself its extent can hardly be believed.

It is not only the outside of the abbey which has suffered. In the vast interior, which is well over 100 ft. high, this destructive grime has collected in places which are not easy to reach. There it is doing its deadly work, eating away the stone, erasing the fine carvings of medieval craftsmen.

The inside walls of the abbey were originally built of pearly grey stone, enlivened by gleaming shafts of Purbeck marble. Now both stone and marble are a drab, unsightly chocolate hue. The surface is often rough, pitted and lustreless.

In the cloisters, even though they are sheltered, the effects of atmospheric pollution are just as tragic. Decorative stonework which only a century ago was quite well preserved, has completely disappeared. The solid stone walls are encrusted with grime, discoloured, and their surface is flaking as though they were suffering from some terrible disease—which indeed they are! Parts of the ribs of the vaulting are already breaking away, and it is questionable if it will much longer be safe to allow the public to walk in the cloisters.

Much of the more serious damage is in the higher parts of the building. Here the stone is rotting and crumbling away. Many of the pinnacles which lend the exterior such grace and height are rapidly becoming unsafe. If they are left much longer without attention they will fall.

Most of the pinnacles were adorned with carved stone finials. Many of these have already disappeared, and about one-third of those remaining are in imminent danger of crashing.

High up on the outside of the abbey, where the roof meets the walls, runs a massive stone balustrade: this is in a sad state of decay. Parts which were on the point of complete collapse have been temporarily shored up with unsightly brickwork. Another great stretch is toppling inwards: had it inclined outwards it would have hurtled to the ground.

I cannot put the case more strongly than to quote the warning of the Surveyor of the Fabric (Mr. S. E. Dykes Bower, FRIBA). He has examined the building and knows better than anyone just how grave the peril is. He has said:

"The stage has been reached at which temporary stopgap measures can no longer stop the decay.

"The arrears of repairs that have accumulated during and since the war have to be overtaken, war damage repairs completed, and the process of cleaning from top to bottom thoroughly carried out.

"Either the task of repairing the abbey properly must be tackled or it will become a dangerous building, unsafe to be used by the public."

As I have emphasised, most of the damage can be attributed to atmospheric pollution. The original builders of the abbey were great craftsmen, for the main structure as a whole remains sound. Even after 700 years there is little or no sign of settling or incline of the lofty pillars out of true.

If the abbey is to be made safe again for daily use and to be preserved for our children, large-scale repairs are essential.

The stonework of the parapets is perishing and dangerous, and must be skilfully renovated. The lead on much of the roof has to be stripped, recast and relaid. Much of the stonework of the magnificent buttresses is defective and has to be dealt with.

It would take much too long to give a full list of the vital repairs desperately needed. Among the list, however, are 19 items described by the surveyor as "most urgent"; the smallest of these will cost £2,500 and the largest £25,000.

*** Photographs showing some of the decayed stonework are on page 338.

## Government Action Urged

A STATEMENT suggesting that the Government should make themselves responsible for the repair of Westminster Abbey has been issued by Mr. G. H. Lowthian, general secretary of the Amalgamated Union of Building Trade Workers, and Mr. H. Weaver, the national president of the union.

The statement says that in January the Prime Minister launched a £1m. appeal fund for restoring the Abbey, but with two-thirds of the year gone only £300,000 has been raised. From the statement of Dr. Adam Fox, Archdeacon of Westminster, it was obvious that unless immediate repairs were carried out, parts of the Abbey would be closed to the public and irreparable decay might occur.

"It is obvious that Government action is required," the statement adds. "Through tradition and practice, Westminster Abbey is now accepted by the people as a national shrine, and as such should be the Government's responsibility. If Government action is not taken now, it will have to be taken later when the position is more desperate. For, if by the end of this year the appeal has failed, are we just to stand by and watch the Abbey fall into ruins? It will become apparent then that the Government must accept responsibility in this matter.

### "Belongs to the People"

"Because of the position enjoyed by Westminster Abbey not only in this country but throughout the Empire, voluntary effort should not have been resorted to in the first instance. It is unfair to ask a certain number of individuals to keep preserved an asset which belongs to the people as a whole. Also, for the Coronation, it was necessary for the Government to spend nearly £800,000 on preparing the abbey. If it was considered worth that sum to be able to use the abbey for a special purpose, then it is only common sense to be willing to spend more on preserving the actual fabric of this historic building.

"The irony of the situation is not relieved by the knowledge that stone and stone masons—the craftsmen who can restore the abbey—are idle because of lack of work. This position also adversely affects recruitment to this traditional industry. In other words, its future is almost as perilous as the future of the abbey itself. By taking action over this matter, the Government could benefit both."

The statement says that legislation authorising grants for the maintenance of historic buildings should be introduced quickly and that Westminster Abbey should qualify for aid under its terms.

# THE LETCHWORTH JUBILEE

## Fiftieth Anniversary Celebrations

THE private enterprise company that has since built the First Garden City at Letchworth was registered on September 1, 1903.

The 50th anniversary of this remarkable pioneer undertaking, writes a correspondent, was celebrated at Letchworth on September 1 and 2 by various events, including an Industrial Fair, at which the manufacturers of Letchworth showed a great variety of products. The event will also be commemorated by a dinner, to be held in the members' dining-room of the House of Commons, on Friday, November 27, under the auspices of the RIBA, the RICS, the ICE, the TPI, the T and CPA and the First Garden City, Ltd., with Viscount Samuel in the chair.

The September issue of "Town and Country Planning" (price 1s. 6d.) is entirely devoted to "The Letchworth Jubilee," and contains a variety of articles by distinguished contributors, including F. J. Osborne, Norman Macfadyen, Lewis Mumford, Carl Feiss, Barbara Hill, C. B. Purdom and many others, covering almost every aspect of the subject, together with messages from various distinguished persons, including Mr. Ernest Marples, Mr. Herbert Morrison, Lord Silkin, Mr. Hugh Dalton, Mr. Aneurin Bevan, Lord Pethick-Lawrence, Mr. H. Seebohm Rowntree, Sir George Pepler and others. The number is fully illustrated.

Letchworth, as Mr. Osborne records, was based on the proposals of Sir Ebenezer Howard in his famous little book of 1898, and the project was always meant to be a demonstration of a new principle of physical developments and of a more healthy and fruitful relationship of town and country. Letchworth, of course, had its forerunners, notably Saltaire, Port Sunlight, Bournville and Sandviken, in Sweden, but First Garden City opened a new chapter in urban history by bringing all progressive elements together into a completely planned town in which the positioning and character of every function was considered. Provision for a variety of independent industries and businesses was combined with housing for all classes. All sites were offered under a leasehold system that would ensure the continuance of as much planning and architectural control as was necessary to maintain

essential standards, before any public planning control was initiated and long before it became widespread. New and better forms of domestic architecture and of open and planted layout were extended to housing for all income groups, including the poorest, in an industrial town engaged in competitive production and having the normal preoccupation with strict economy.

From the first, the town had the advantage of architectural design and supervision. Sir Raymond Unwin and Barry Parker planned it and also designed much of its early housing, and many other architects worked there, including Robert Bennett and Wilson Bidwell, C. M. Crickmer, Percy Houfton, C. H. Hignett, M. H. Baillie-Scott, Halsey Ricardo, H. Clapham Lander, W. H. Cowlishaw, Thomas Adams and others.

Letchworth, in its early days, as many will remember, was widely regarded as a cranky experiment, an impression that was probably due to the eccentric dress and behaviour of some of its residents; but the social and cultural character of the town —informal, spontaneous, friendly, unconventional and democratic—in fact anticipated modern trends and has had considerable influence in Great Britain and in other countries, particularly in the United States.

At a Press conference on August 20, to present the Letchworth Jubilee issue of "Town and Country Planning," SIR ERIC MACFADYEN said: "Although Letchworth was the prototype of new towns, its development has been on very different lines from that of the new towns included in the current programme. Development corporations have the backing of public credit and plan their units from the word go — providing housing, public utilities, schools, playing fields and the many other capital requirements of an up-to-date modern community in advance. Letchworth, on the other hand, grew factory by factory and, in the first half of its career, almost house by house; its work places in most cases developing from quite small beginnings. There was no Ministry to acquire land for Letchworth, no Board of Trade with power to canalise industrial development in its direction by a system of building permits. Letchworth, a private enterprise town, has had to proceed step by step, paying its way as it went along.

### £450,000 Invested

"The money invested in Letchworth is no more than £450,000, in preference and ordinary capital—both classes of stock received 5 per cent. per annum. Of the physical assets comprising the property of First Garden City, Ltd., to-day, two-thirds have been provided by sheer hard work and business ability on the part of the directors and their staff. Profits have been ploughed back into the business over the years. Translating into present-day depreciated money, the value of the capital invested, at the time of its investment—the total cost of the estate—would not come out at above, say, two million of to-day's pounds, a figure which compares with five or six times that of a corporation town.

"The first generation of citizens had a good deal to put up with in the way of inconvenience and even hardship. They bore these cheerfully and the slow rate of development has meant that the growth of the town was more like that of a living organism adapting itself to its environment by trial and error. The 70 factories to-day give employment to some 11,000 work people; and Letchworth has known almost no unemployment and not a single strike. The 32,000 population aimed at will be attained within the next 10 years (but for the two wars it would have been reached before now) in a healthy, prosperous and well-balanced community."

MR. F. J. OSBORNE said: "England doesn't realise what Letchworth has done. Perhaps the pioneers made a mistake in choosing a site only an hour from London. They should have built the First Garden City in Sweden, or in some remote Usbuzblankistan in Central Asia. Then swarms of architects and journalists would have made pilgrimages to it and come back with reports about this modern miracle. It was an incredibly daring thing for a handful of men, with only £40,000 capital, to start in 1903 to build a complete self-contained industrial town on entirely new lines. But there the town now is, with 21,000 people, and 10,000 or more working in its many prosperous industries."

## "ARTISTS OF FAME AND PROMISE"

### An Exhibition at the Leicester Galleries

IT is not easy for most of us to keep *au courant* with what is going on in painting and sculpture, and even memory of what has become established needs occasional refreshment. The fact that other considerations have come to obscure the "painteresque" factor in design is incidental and, it is to be hoped, temporary, and we shall do well to remember the inter-relation between all the arts, including architecture, which, in the final analysis, derive much from contemporary painting.

The London galleries from time to time mount what are in effect "ready references," giving small surveys most convenient for those less technically concerned with the fine arts but, very properly, of interests wide enough to want this occasional refreshment. One such is at the Leicester Galleries, being part two of the twenty-first annual exhibition of paintings, drawings and sculpture by artists of fame and promise.

It is, I hope, no breach of confidence, and certainly no discredit, to say that in fulfilling the above purpose this exhibition aims simply at offering something for everybody's taste during the comparatively "dead" season, and that the taste so catered for is not necessarily that of the expert. In these circumstances, it is beside the point if the expert were to feel that, in the case of the "famous," they might not have become so solely on the strength of the examples here chosen to represent them and that, in the case of the "promising," the promise is not always explicit. But in view of the undoubted fame of such names as Stevens, Brangwyn, Pryde, Sickert and (of more modern times) John, Epstein, Moore and Piper it is reasonable to assume that many of the younger men and women represented can be taken on trust as one day becoming household words.

The choice sometimes seems arbitrary, but is on the whole representative though probably dictated as much by what is readily available as what might be more truly typical. Mainly, the "masters" are represented by outstanding works—though there are two John portraits which look oddly like somebody "after" John—so presumably the same applies to the less well-known.

Among a purely personal choice are Henry Moore's two "Morning After an Air-raid" studies (8 and 12), a rather *Douanier Rousseau* "Postman" by Jane Taylor (23), and Robin Darwin's telling, small anecdote "Lunch Time, Piazza S. Ignatio, Rome" (72), an acute observation of priests against hot, brown stucco. A rather conventional and tentative small painting of Twickenham Ferry by Mary Kent Harrison (142) may be overlooked, but it is likely to please architects for a rather odd reason that prompts some thought: it is that the charm of eighteenth-century buildings, largely formal and textural, has qualities best expressed by precisely this sort of technique. The more modern and less academic painters have for some reason failed in architectural subjects, in so far as one can generalize.

Of the sculpture, there seemed to be less to warrant the qualifications of the exhibition's title, and even Epstein's "Peggy Jean" (179) seemed a little overfamiliar in subject and treatment; but I liked Ursula Warren's copper "Cockerel" (182). These are selected almost at random for mention, and few will fail to find other agreeable and covetable works in the exhibition, which remains open until September 23 (10-5.30 weekdays, 10-1 Saturdays).

BASIL MARRIOTT.

## RELEASE OF APPRENTICE FOR DAY TIME CLASSES

### Industrial Disputes Tribunal's Decision

A REPORT has now been made of what is believed to be the first case in which the application of the National Joint Apprenticeship Scheme has been before the Industrial Disputes Tribunal.

The issue arose from the alleged failure of an employer to release an apprentice for attendance at day-time classes at a technical college, and the Industrial Disputes Tribunal met on July 24 to consider whether the employer concerned should observe the terms of the National Joint Apprenticeship Scheme for the Building Industry relating to attendance of apprentices at technical day-time classes. The employer was not represented at the hearing and he made no submissions to the tribunal in writing or otherwise.

Reference was made to the apprenticeship scheme agreed by the National Joint Council for the Building Industry on November 1, 1945, and particularly to the clause therein governing attendance of apprentices at technical classes.

It was submitted that the employer had indentured an apprentice under an indenture which was not in accordance with the standard deed specified in the above scheme, and which did not provide for his attendance at day technical classes; further, as the apprentice was not serving under the agreed apprenticeship scheme he was not eligible for registration under the apprenticeship registration scheme of the building industry, and might consequently be unable to secure deferment from military service until he has completed his apprenticeship.

The findings of the Tribunal were "that the recognised terms and conditions of employment for apprentices employed in the building industry in England and Wales are those set out in the apprenticeship scheme as agreed by the National Joint Council for the Building Industry, dated November 1, 1945. The tribunal further find, and so award, that the employer concerned should observe these recognised terms and conditions so far as they relate to attendance of apprentices at technical day-time classes."

# *Factory at Brynmawr*

## *for Brynmawr Rubber Limited*

*Architects*
*ARCHITECTS' CO-OPERATIVE PARTNERSHIP*

*Consulting Engineers*
*OVE ARUP AND PARTNERS*

*Builders*
*GEE, WALKER AND SLATER LIMITED*

*The main production area.*

THIS new factory in South Wales has probably attracted more attention than any other industrial building completed in Britain since the war. In the last annual review of current architecture he wrote, the late Professor Charles Reilly described it as the most interesting scheme, constructionally, of the year. That was in 1947, soon after the work of erection had started. It is, with various supplementary finishes — brick, precast slabbing and glass for instance—a wholly reinforced concrete structure, in many respects exceptional and in some unique.

The factory has been designed to house a large general rubber and plastics manufacturing business in which rubber and rubber latex with various plastics, powders, oils and dye-stuffs are the chief raw materials used. The project is in line with the official policy of creating some balance in industry in those areas formerly subject to economic depression.

A factor leading to the selection of the site of the new factory was the abundant water supply, a commodity rubber manufacturers use in great quantities. This can be attributed to an ironmaster, who in 1799 built a dam and created the now long-disused reservoir, the 18-acre Waen Pond, which forms part of the 37-acre site. The site is on the southern edge of Brynmawr, a town of about 6,000 population, on the borders of Breconshire and Monmouthshire. It lies at the head of one of the seven South Wales valleys, with easy communication east and west as well as to the south. The north-south Brynmawr to Newport road on which the factory depends for the transport of all the raw materials and finished goods—of everything, in fact, except coal—actually bisects the site. To the north the land is bounded by the steeply embanked railway which crosses over the highway at this point. The site itself is over 1,000 ft. above sea level and is extremely exposed.

*The mill room with the domes of the main production area and the shells of the drug room beyond.*

Over the whole area there is considerable slope from north to south and to a lesser extent from east to west. The main factory building, which occupies the lower part of the site, west of the road, stands rather below the highway level. The boiler house, an entirely separate building, is on the opposite side of the road and at a higher level. This siting places the factory alongside the water of the old reservoir and the boiler house next to the railway on which it depends for coal.

Immediately below part of the site, galleries still remain from the nineteenth-century mine workings and one of the first things needing consideration was a precaution against future subsidence. The area chiefly affected is that covered by the north-west corner of the factory and to fill the voids still remaining 500 tons of cement in the form of grout were here pumped into the old workings.

### *THE LAYOUT*

The whole main building covers a rectangular area of about 325 ft. by 450 ft. Of this about 77,000 sq. ft. is taken up by the main production area, which to the north is flanked by the drug room, to the west by the mill room and on the south by a block containing, among other things, the entrance hall, administra-

tion offices, welfare department, cloakrooms and lavatories.

By the arrangement of these separate departments at different floor levels, the difficult slope of the site has been overcome and turned so far as possible to the advantage of the production flow.

From the point of view of production, the factory is divided roughly into two principal sections: the drug and mill rooms area where the raw materials are prepared and stored in a semi-processed state, and the main production area where finished articles are made. In the first of these, all the accommodation is planned specifically for the plant involved, whereas the second, because its finished products may often have to be varied to meet the demands of the market, is treated simply as a large, clear floor space with a minimum of supporting columns.

Reserves of raw materials as well as of finished goods are kept in the large storage space below the production floor, which also houses the sprinkler pumps and pressure tanks, the sub-station and transformer rooms, garaging, charging and batteries and other general equipment needed for the factory.

The plant used in production is light and liable to be changed frequently, and for reasons of flexibility the services for machines are suspended from the ceiling of this basement store. They can be brought up at almost any point through 7 in. square holes cast 6 ft. 4½ in. apart in both directions over the whole floor slab. Cast-iron covers set flush with the floor fit into the holes which are not in use.

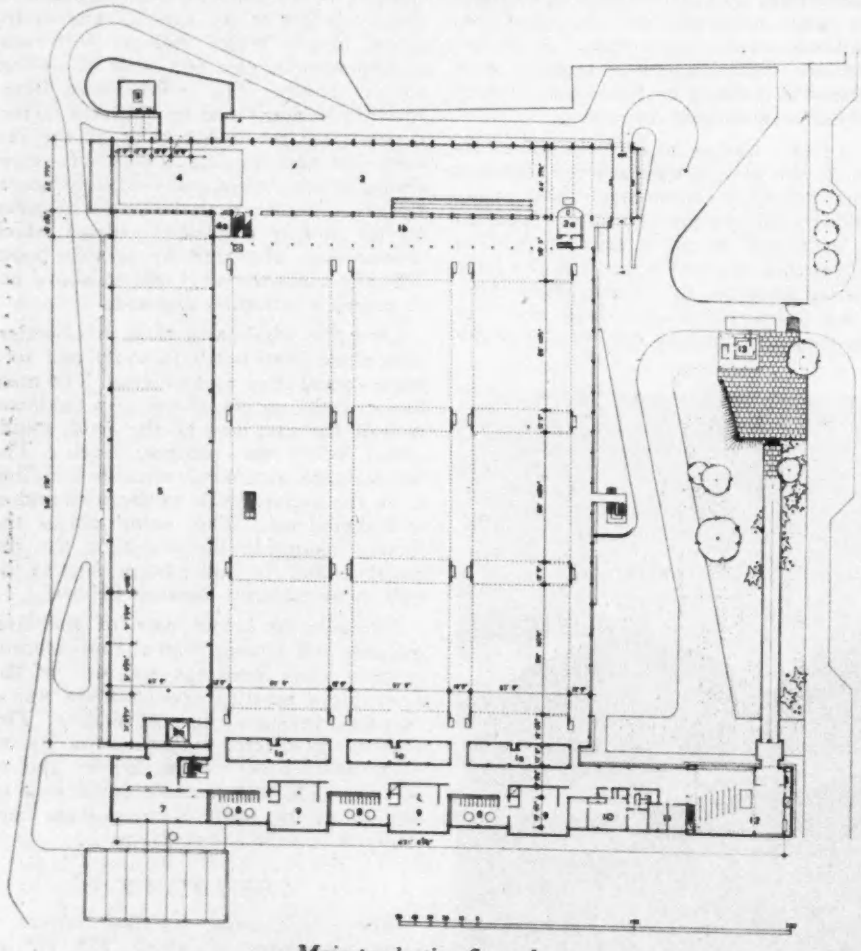
The entrance hall, cloakrooms and lavatories for the workers, which are contained in the south block with its outlook across the reservoir, are all planned on a level with the main production floor. A mezzanine immediately below, with extensions along the west and north sides of the storage area, holds most of the heating and ventilating plant. Below this and on the lowest level are offices, engineer's stores and accommodation for the fitters.

Incoming raw materials, other than carbon black, which is dealt with separately, enter the building at the loading bay on the east end of the drug room, and either go to the storage area below the production floor or pass by way of the drug room and mill room through the various preparatory processes to the main production area. Between the preparatory and finishing stages some material is treated in the printing and spreading department situated at the south-west corner, a section with a heavy fire risk, which is therefore isolated. All the products finally arrive in the finished state at the inspection room end of the main production area and from there go either to the store below or straight to the loading bay for despatch. Carbon black, a material liable to spread its blackening influence everywhere unless strictly controlled, is kept in a small store at the north-west corner, separated from the main building by a covered lorry-way. From there the black is introduced into the manufacturing process by a closed mechanical conveyor at the point where it is needed.

All raw materials arrive and all finished goods leave the site by a single traffic entrance. Personnel enter and leave by another entrance, and both are arranged so that they can be supervised and controlled from the same vantage point.

Of the whole construction the most interesting feature is the thin shell concrete roofing, particularly that to the main production area. The nine rectangular domes over this section are in fact thought to be a new type of dome and are certainly larger than anything of their kind constructed before. With shell concrete roofing there are few projections or ledges to harbour dust, one thing the rubber industry must contrive to avoid. Flat slab construction, used to form the floor of the production area, is especially suitable for this particular purpose, and its absence of beams considerably simplified the conveying of services and ventilation ducts below. As the basement, or more precisely the lower ground floor, is chiefly for storage, the relatively close spacing of mushroom-headed columns is no disadvantage.

In all the working areas heating is by warmed air and ventilation is mechanical; in the south block the heating is by hot-water radiant floor panels and the ventilation is natural.



*Main production floor plan.*

KEY: 1. *Main production area*; 1A. *production offices*; 1B. *inspection area*; 2. *drug room*; 2A. *receiving and dispatch offices*; 3. *carbon black—upper part*; 4. *Banbury corner*; 4A. *foreman's office*; 5. *mill room—upper part*; 5A. *goods lift*; 6. *kitchen*; 7. *canteen*; 8. *lavatory*; 9. *cloakrooms*; 10. *medical officer*; 11. *labour officer*; 12. *entrance hall*; 13. *weighbridge office.*

## *STRUCTURE OF THE MAIN BUILDING*

The whole structure rests on piled foundations driven through strata of variable soils to a bearing mainly of sandstone. The piles, which are of 15 in. and 19 in. dia., with a working load of 40 tons and 60 tons respectively, are cast *in situ*. Generally lengths of up to 25 ft. were necessary, but in some places less was sufficient. Mushroom-headed columns supporting the flat slab floor of the production area each stand on a single pile, but all the more heavily loaded supports, including those to the domed roofs, are carried on groups of piles.

The flat slab, a 7½ in. thick floor increasing to 11 in. at the drop panels, is designed for a general superimposed loading of 240 lb. per sq. ft. and axle loads of 5 tons on mobile cranes. The columns are spaced regularly 19 ft. 1½ in. from centres in both directions.

## *DOMED ROOFING*

Each of the nine domes roofing the main production area covers a rectangular area of about 82 ft. by 63 ft. and rises roughly 8 ft. from springing to crown. These thin two-way curving slabs, which for the

most part are only 3 in. thick, are generated by a vertical circle 82 ft. 9 in. in diameter moving on a circle 108 ft. in diameter. All nine domes are identical. They are designed to carry a superimposed loading of 15 lb. per sq. ft. and except for some tension across the corners the stresses are entirely compressive. Two layers of hard drawn steel wire of 6 in. mesh and about 3 lb. weight per sq. yd. were used for the main reinforcement, with supplementary ½ in. mild steel bars placed across the corners. Each dome is supported along all its four edges by a reinforced concrete bowstring type truss with the top boom following the thin shell dome curvature and the bottom boom the horizontal. Both booms are nominally 9 in. thick and are connected to each other at regular intervals by 4 in. by 2 in. reinforced concrete hanger members, precast and built in.

The open spandrel formed by these girders is glazed and provides the main source of natural light to the interior. This clerestory lighting, supplemented by 6 ft. circular glass domes in the shell roofing, gives a minimum daylight factor at working level of 5 per cent. Where the longer and shorter span girders meet at the corners the main reinforcement from each extends into the other to form a continuous tie all round. Except for an area at the intersections where four domes meet, the flat walk-way slabs in the valleys between the domes are cast integral with the lower boom of the bowstring truss. Here the construction is considered to be sufficiently flexible in itself to accommodate thermal and other movement; the amount involved, which in any case is but slight, being taken up by relative movement between the top and bottom booms of the girders.

However, at the intersections where the top and bottom booms join and trusses of opposite spans meet, structural stiffness increases and to avoid restriction of movement at that point, independent cruciform-shaped areas of walk-way are introduced. These free areas of roofing extend about 10 ft. along the dome sides in all four directions. They are separated from the lower boom by expansion jointing and from the rest of the walk-way by rebated jointing. Support is afforded by the rebated bearing at the end edges and also by the horned extensions projecting from the bowstring girders, the bearing here being a sliding one.

At each dome corner the roof structure receives support from a column of rectangular cross section set to an inclination of about 15 deg. from the vertical placed immediately below the 82 ft. major span girder and constructed to the same width. Pairs of inclined columns supporting adjoining domes converge towards floor level, and below are carried on a T-sectioned support of 7 ft. flange-width and 9 in. thickness with a 12 in. by 18 in. rib. The inclination of the columns is adopted primarily to reduce obstruction of the working floor and the direction of the slope chosen to suit the directional flow in production.

The formwork for these large curved concrete surfaces was made up of aluminium alloy and steel scaffold tubes and steel decking plates. All nine domes were constructed with only three sets of scaffolding and two sets of plates.

The steel tubes, curved to radius and supported on diagonally braced verticals, were used to form main trusses at approximately 6 ft. centres parallel to the short span. On these were laid the aluminium tubes in pairs, 4 in. apart, at 2 ft. from centre to centre of pairs. The decking plates which were mainly 2 ft. square were placed on these tubes and clamped to them with ordinary scaffold clips to prevent uplift by wind during construction. The structure so formed was supported throughout on steel jack shores to allow for final adjustment of curvature and to simplify the striking.

Concreting was carried out in the following order:

(1) Bottom booms of the trusses and the adjacent portions of the walk-way slab.

(2) Top booms and the first 10 ft. of the dome.

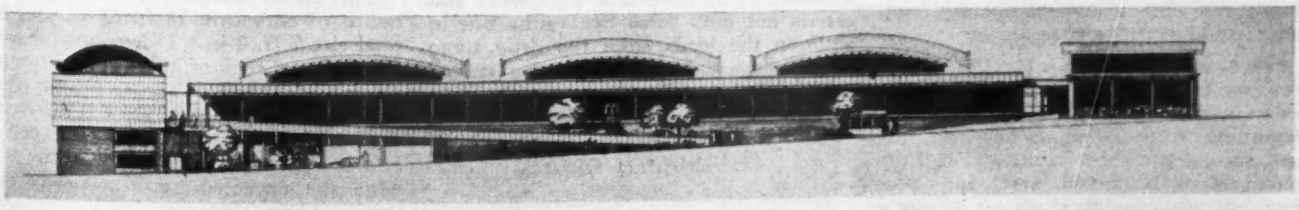
(3) The remainder of the dome, which was normally completed in one operation.

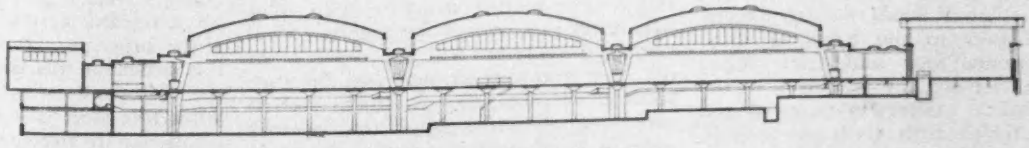
These last two operations, both of them involving the dome, were always carried out in two whole working days. The concrete for the domes was made with rapid-hardening Portland cement and the formwork struck ten days after placing. It was on April 7, 1949, that concreting of the first dome began, and by early August the ninth had been completed.

## *DRUG AND MILL ROOM ROOFS*

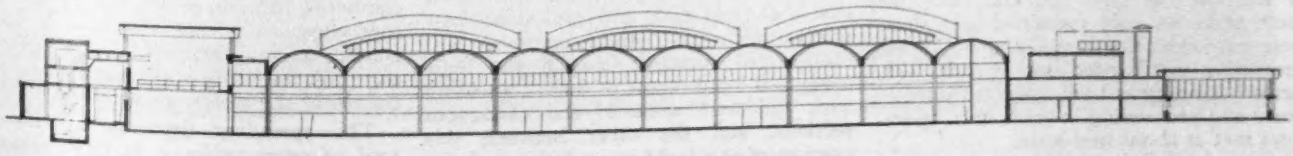
The roofs to the drug and mill room sections of the main building are of long-spanning thin shell concrete barrel vaulting, three-centred in both cases. In the first a series of 26 vaults, each with a chord width of 12 ft. 9 in., makes up the total length and spans the 44 ft. 7½ in. width transversely. In the mill room ten vaults each of 30 ft. chord width make up the length and in this case span the 63 ft. 9 in. width. Arch ribs projecting downwards from the curved under surfaces and springing from the supporting columns give the necessary gable stiffness. In the drug room section the thin curved shell cantilevers 2 ft. 6 in. beyond these ribs at each end and in the mill room section 4 ft. 6 in. beyond, but at only one end.

Up to the level of the longitudinal beams, which in the drug room carry the rails of the 5-ton travelling crane, the rectangular columns support the beams and the loads transmitted by the crane together with those of the roof. The columns on the north side, which are designed to take eccentric loading from the crane and the wind, are larger than those opposite and taper from the base upwards. Above crane rail level the construction lightens considerably. Here



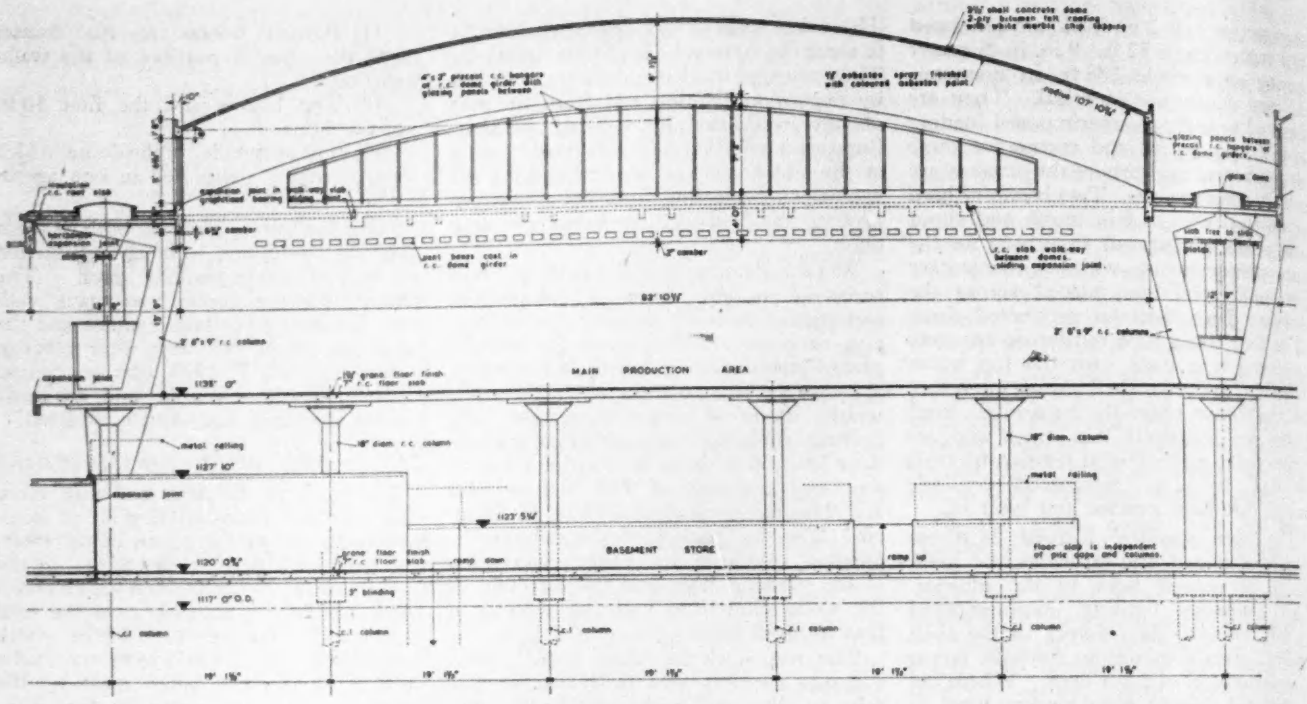


South to north section through factory.



North to south section through mill room etc.

*Main elevation (above) and sections through the factory.*




*Drug room and dome section.*

the columns are circular with a diameter of 8 in. on the south side; those on the north side, that take the wind load, are 12 in. by 8 in. in section and oval in shape. Horizontal thrust from the vaults is taken at one end by a wall and at the other by a pair of larger columns, and the whole roof structure between is made flexible enough to accommodate all the temperature and shrinkage movement likely to occur. Concrete hinges formed at the crown of the ninth and eighteenth vaults and designed always to be under a compression, with corresponding joints for expansion in the crane rail beams inside, divide the whole drug room section into three parts. During construction, before the roof was complete and while the external end restraints to horizontal thrust were non-existent, temporary resistance had to be provided.

Formwork for only four complete vaults, was used for the whole of the roof and the concreting therefore proceeded in stages. Beginning at the loading bay end, the first, second and third vaults and half the fourth were concreted first, and after they had gained sufficiently in strength, temporary diagonal struts were inserted from the column heads between vaults three and four to the bases of those between vaults four and five. When these were in place, the formwork to the three complete vaults was removed and re-erected for the fifth, sixth and seventh. From there on, two whole and two half vaults were concreted at each stage, and at each stage diagonal strutting was placed in the last bay. At the end only one vault and one half remained and these were treated as a separate stage. All the concreting was carried out in 3 ft. wide strips beginning at both verges simultaneously and proceeding inwards until operatives met at about mid-span.

The mill room roof of ten vaults was constructed with two expansion joints, one between the third and fourth vaults and the other between the seventh and eighth. These joints extend into and divide the columns below into twin supports and so separate the structure into three independent sections. Here the horizontal roof thrust is shared between two columns through 1¼ in. dia. steel tie rods which are inserted from head to head of columns in the end bay of each of the three sections and are masked by the bars in the glazing.

Where, at the " Banbury room " corner, the drug and mill room roofs meet, the last five vaults over the drug room are carried at one end on a 64 ft. long reinforced concrete Warren-type girder which spans across the mill room. The girder is about 13 ft. deep and 2 ft. wide and carries not only these five vaults but in addition the loads from the drug room crane rails, a walk-way and the low curved section of the roofing that links the drug and mill room areas.

## *THE SOUTH BLOCK*

Unlike other parts of the building, the south block is mostly a three-storeyed beam and column-framed structure with solid slab floors and, except for the thin shell vault to the entrance hall, flat roofed. On the top storey, cloakroom and lavatory sections alternate, the cloakroom section projecting upwards above the lavatory roofs and outwards in front of the main building face. These projecting sections have been treated as open-ended reinforced concrete box elements with solid side walls and floor and roof slabs, cast integral with the framing members and cantilevered forward some 6 ft. Four expansion joints, three of them coinciding with the west walls of the cloakroom sections, and the other between this portion of the building and the entrance hall wing, separate the supporting members where they occur into twin columns and twin beams and divide the total length into four parts. The entrance hall, which is at the same floor level as the cloakrooms, like them, cantilevers out beyond the general face of the building. Its thin shell roof, of unusual design, is a single vault spanning 57 ft. between the supporting solid wall end frames and cantilevering between 5 ft. and 6 ft. beyond them at each end. Instead of the more usual edge beam, a flat extension of the slab tilted slightly upwards from the springing resolves the conditions obtaining at the vault edge. When he saw the building on the visit he paid to England in 1950 it is reported that it was this vault which Frank Lloyd Wright found of particularly absorbing interest.

The chord width is 37 ft. 7 in.; the radius of curvature 28 ft. 8½ in. and the total rise 7 ft. 2 in. Calculations showed that with a roof of this form deflexion, downwards and outwards, would occur at both the long edges, while at the crown the vault would remain level from end to end of its length. On the extreme vault edge the expected maximum deflexions were 1.32 in. vertically and 0.5 in. horizontally with a gradual diminishing both ways, towards zero at the crown and zero at the supports. In constructing the roof this deflexion was taken into account, and the formwork, which was supported on adjustable steel jack shores, was carefully cambered in anticipation of the ultimate deformation. The observed deflexions were in fact in almost exact agreement with those calculated, and from the slightly cambered form in which it was cast the roof edge, on release, assumed the horizontal; a condition which was essential to permit the fixing of the standard glazing frames of the clerestory windows.

The spreading department, with its roof of seven vaults, is in most respects similar in construction to the drug room.

Expansion joints, besides being used

to sub-divide individual sections of the factory into several parts, are constructed between the main sections themselves so that each is structurally isolated from the other.

### *EXTERNAL STAIRS AND RAMP*

Two seemingly minor features, both projecting outward from the main body of the building, make an important contribution to the overall design conception, adding to the modelling and giving a depth to the light and shade. One is the escape stairway from the production floor of the factory, the other is the ramp that leads up to the main entrance hall.

Although small, and the less obtrusive, the staircase, which in official language would probably be described as "an alternative means of escape," is perhaps the more interesting of the two. Its position is approximately central and on the "front" and it does in fact provide an emergency link between the factory floor and the forecourt below. Essentially it is a ramped concrete slab, 3 ft. wide and 8 in. thick—a reinforced ribbon bent and doubling back under itself in its rise from the ground to the level of the upper floor. Where at the top the floor and slab join, and again at the ground, there is structural fixity. At about midway in the length, the structure poises on a V-shaped support, cast homogeneously with the slab itself but hinge-jointed at the toe, where it touches and receives support from the ground. The applied treads, raised free of the slab and floating as it seems on short lengths of protruding bar, and the handrailing, both add a rhythmic, repetitive patterning. The whole is an asymmetric monolith: structurally, a statically indeterminate solution; architecturally, a piece of abstract design.

The inclining ramp which leads up to the entrance hall and affords the everyday way of approach and entry into the building is simpler in conception and more regular in shape. It is in effect a long trough-shaped beam rising in a straight line from the ground to the floor that it serves. The base of the trough forms the deck slab; in cross section it is plain on top and tapering on the underside from a central thickening towards the two edges. The sides are the balustrade walls. Base and walls are homogeneous and the whole functions in unison. Like the escape stairway, it has structural continuity with the floor at the top and with the ground at the base. A central row of columns dispersed along its length gives support. Against the flat plane surfaces and predominantly vertical and horizontal lines of the road elevation, its own low raking line stands out prominently and in complete contrast.

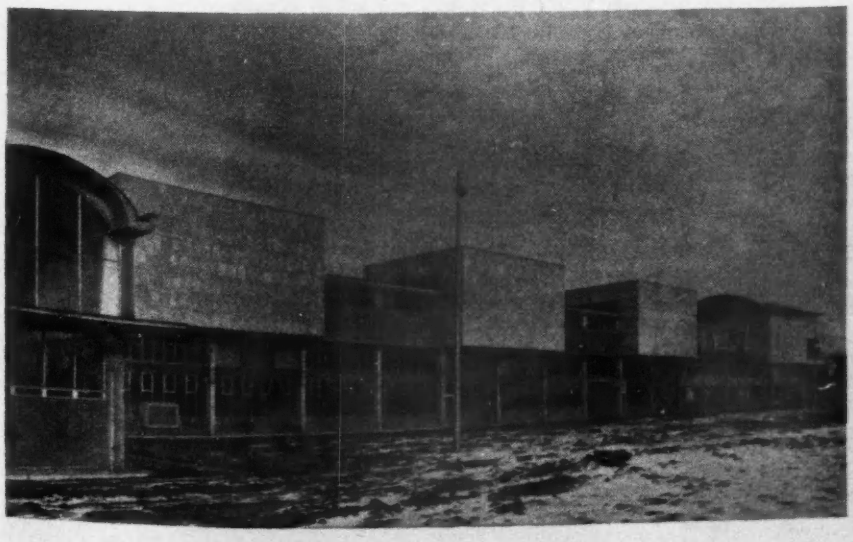
### *FINISHES*

Domed and vaulted roofs alike are finished on the outside and made waterproof with a two-layer covering of bituminous felt. The felt is stuck with adhesive mastic to the concrete itself and sprinkled over on top with white marble chippings to reflect light and reduce heat absorption from the sun. The same covering is used on the flat roofs, but here a 2 in. thickness of insulating foamed concrete is laid over the structural concrete before the waterproofing is applied. Thermal insulation of the domes and vaulting mainly derives from the finish to the inside; a ½ in. thickness of sprayed asbestos. Calculated U values for these two roof treatments are respectively 0.20 and 0.35.

Most of the external walling consists simply of panels of infilling material fitted between the structural members, but in several places, principally on the south block and in small areas elsewhere, some is of reinforced concrete. Where reinforced concrete walling occurs it is cast integrally with the framing members and functions structurally. In the small areas —for instance in the link between the main building and separate carbon black store— the reinforced concrete wall is 6 in. thick with an additional 2 in. wood-wool lining. During construction the wood-wool served as inner formwork, while external formwork was plywood with battening on the face which produced a permanent rib pattern on the surface of the concrete. In the south block 6 in. thick reinforced concrete walling to the projecting cloakrooms and entrance hall as well as that to the side of the canteen, is faced outside with precast exposed aggregate slabs and inside with wood-wool. The slabs, which are 1½ in. thick, and the wood-wool, which is 2 in. thick, act as outer and inner formwork respectively. Wood-wool, again used as formwork, makes the outside finish to the wall in the remainder of this south block top storey. In this case it has been decorated with a matt finish paint and then enclosed behind patent type roof glazing extended downwards from the fenestration above.

Stone and brick are chiefly used for the infilling panel walls, the stone on the whole being confined to places below the ground floor where the surrounding ground has been excavated below the original level. The stonework is a random rubble of locally quarried limestone somewhat similar in shape, texture and scale, but not colour, to Kentish rag. From ground floor upwards to underside of the lowest sill, the walling is carried up in brickwork, sometimes running in front and masking the structural members, but more often recessed to reveal them. Practically everywhere this brickwork is of 11-in. cavity construction with red rustic facings to the outer leaf and pressed commons to the inner. Hoop iron strips cast into the concrete of the columns and built into the brickwork joints tie this walling in. A wide shallow rebate formed in the column sides, of which the brick stand slightly proud, serves to emphasise the vertical junction and marks the distinction between structural and infilling material. Apart from the general cleaning up necessary for appearance, the concrete of the structural members themselves has been left untouched.

For the rest there are large areas of



*South elevation and (right) detail of the east end of the south block. The entrance hall occupies the top storey. The walls to this are* in situ *reinforced concrete faced with a permanent formwork of precast slabbing. The approach to the entrance hall is by way of the ramp seen on the right.*

glazing. Offices, canteen, entrance hall and fitters' shop are windowed with casements, but all the other fenestration is in patent type roof glazing fixed vertically, the frames of the windows and the bars of the patent glazing being of aluminium.

Inside, the finishes generally are nowhere elaborate, and, apart from plaster to some walls in the south block, the main face of the brickwork is simply painted, as are the concrete structural members.

By comparison with the factory building, the boiler house is quite a small structure, and yet by no means the least attractive feature of the scheme.

It is a two-storey building connected to the main factory by a subway from below, and at the upper level to the near-by railway goods yard.

### *CONCRETE*

Most of the concrete used in the construction was a 1:2:4 mix by volume of crushed whinstone, sand from Newport Sand and Gravel Co. (dredged channel sand) and ordinary Portland cement. For the thin slab vaults and roof domes the concrete was different, with mix proportions about 1 : 2½ : 3½, in this case made with uncrushed ⅜-in. gravel from Herefordshire, a coarser sand from Kidderminster and rapid-hardening Portland cement.

The factory has been built for the Wales and Monmouthshire Industrial Estates, Ltd., and leased by them to Brynmawr Rubber, Ltd., a subsidiary of Enfield Cables, Ltd.

To make an early start on the construction, the scheme was divided from the beginning into three distinct contracts. The first stage, the foundation work, was carried out by the Cementation Co., Ltd. From there, up to the flat slab mushroom column tops below the main factory production area, the contractors were Holland & Hannen and Cubitts, Ltd., who were also responsible for the boiler house and subway connecting it with the main buildings. For all remaining work the contractors were Gee, Walker and Slater, Ltd.

Following is a list of sub-contractors and suppliers:—

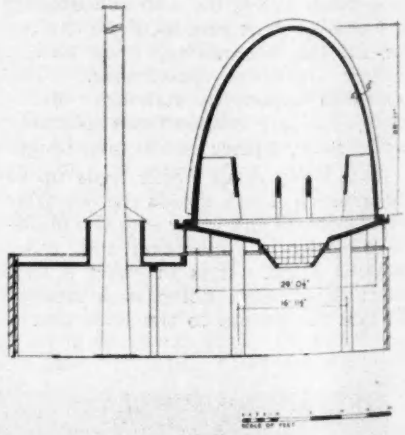
Sub-contractors and suppliers for the boiler house: Piling, The Cementation Co.; rolling shutters, Haskins Rolling Shutters, Ltd.; railings, balustrades, access galleries, cat ladders, duct covers, etc., Fisher and Ludlow, Ltd.; spiral staircase, Advance Welding Company; steel windows, Henry Hope and Sons; roof lights and glazing to west end of roof, Williams and Williams, Ltd.; railway lines, capstan and fairlead, Thos. W. Ward, Ltd.; sanitary fittings, Shanks and Co.; flushing valve, B. Finch and Co.; electric wiring, Troughton and Young, Ltd.; light fittings, The Benjamin Electric Co.; tiling, J. C. Edwards (Ruabon), Ltd.; ironmongery, J. D. Beardmore and Co.; coal screens, Clarke Hunt and Co.; boilers and accessories, Davey, Paxman and Co.; incinerator, The Incinerator Co.; chimneys, Musgrave and Co.; pipe fitting, Matthew Hall and Co.

Sub-contractors and suppliers for the Brynmawr factory: Piling, The Cementation Co.; asphalte tanking and damp courses, Excel Asphalte Co.; gravel, stone, aggregate and sand, Hereford Washed Sand and Gravel, Ltd., Monmouthshire Associated Quarries, Ltd., Newport Sand and Gravel Co.; facing bricks, The Cattybrook Brick Co., Dunbrik, Ltd.; common bricks, Richard Thomas and Baldwins, Ltd.; cement ("Amerthaw") partition blocks, stoneware, H. R. Paul and Sons; reinforcing steel, Whitehead Iron and Steel Co.; friction block bearings, The British Graphitised Metals Co.; expansion jointing, Expandite, Ltd.; stone for masonry, Robert Evans and Sons ("Abercarn"); precast facing slabs, The Penarth Concrete Co. (1927); plastering and granolithic work, W. A. Telling (South Western) Co.; sanitary fittings, John Bolding and Sons, Adamsez, Ltd.; electric wiring and installation, T. Clarke and Co.; switchgear, A. Reyrolle and Co.

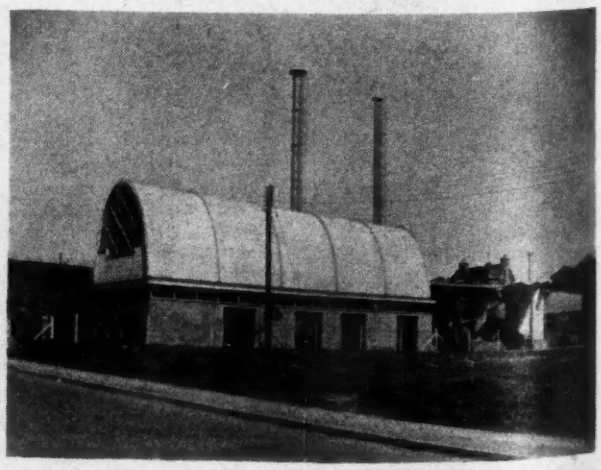
Light-weight insulating concrete, Celcon, Ltd.; false ceilings, Denny Mott and Dickson, Ltd., Trussed Concrete Steel Co.; false ceilings, expanded metal and access panels, Campbell Denis, Ltd.; heating and ventilating Matthew Hall and Co.; panel heating, G. N. Haden and Sons; aluminium windows, copings, metal screens, patent glazing and roof lights, Williams and Williams, Ltd.; street lighting standards ("Adastra"), Poles, Ltd.; sprayed asbestos roof insulation and applied sprayed paint finish Turners Asbestos Cement Co.; lifts, J. and E. Hall, Ltd., Herbert Morris, Ltd.; hydrant and sprinkler installation and fire-resisting doors, Mather and Platt, Ltd.; aluminium copings, etc. Steel Fabricators (Cardiff), Ltd.; felt roofing and "Accotile" flooring, The Neuchatel Asphalte Co.; roller shutters, Haskins Rolling Shutters, Ltd.; sliding door gear, Geo. W. King, Ltd.; door furniture, Mountford Bros., A. J. Binns, Ltd.; handrails balustrades, etc., S. W. Farmer and Son.

Weighbridge and weighing platforms, W. and T. Avery, Ltd.; pumps, Sulzer Bros. (London), Ltd.; canteen equipment, Benham and Sons; canteen floor, The Granwood Flooring Co.; lavatory partitions, Henry Hope and Sons; aluminium roof light domes, The London Aluminium Co.; laboratory installation, A. Gallenkamp and Co.; cloakroom fittings, Mountford Bros.; clocks, internal telephones and loudspeaker systems, Telephone Rentals, Ltd.; time clock stands and shower partitions, Sommerfelds, Ltd.; time office and office partitions, Holoplast, Ltd.; fluorescent light fittings and special equipment and street lighting fittings, The British Thomson-Houston Co.; tungsten light fittings, Holophane, Ltd., The Benjamin Electric, Ltd., Simplex Electric Co.; hose reels (offices), Pyrene Co.; precast concrete floors, Flooring Contracts (London); mirrors, B. Finch and Co.; terrazzo finish to office stairs, South Wales Tile and Terrazzo Co.; toilet roll holders, Sculthorpe and Co.; terrazzo tiles, Pietro, Ltd.; flooring in laboratory, Jaconello, Ltd.

Tarmacadam to roads, Shepherds (Rochdale), Ltd.; steel escape stairs, B. Finch and Co.; earthing installation and lightning conductors, W. J. Furse, Ltd.; fencing and gates, Bayliss, Jones and Bayliss, Ltd. poison cupboard, Medical Supply Association; duct covers, Dover Engineering Co., H. R. Paul (ex Dudley and Dowell); electric wiring to ramp and supply of conduit and fittings, Supreme Electrical Supplies.



*The escape staircase in reinforced concrete which gives alternative means of escape from the main production floor.*



*A general view and (above) cross section of the boiler house, which is connected to the main building by a subway.*

# BUILDING ESTIMATING

## 3.—By-laws and Regulations

**By a Fellow of the Institute of Building Estimators**

WHERE a bill of quantities prepared by a qualified expert is provided we come nearest to the point where the instructions are couched in terms "capable of only one interpretation by all who should read and (understand) them."

Now while equity and reason in competing for building work would both be best served by the greater use of qualified quantity surveyors, this is nevertheless a counsel of perfection. For one thing, the "standard method" would have to undergo some rigorous pruning (of those items which in the aggregate produce only a small percentage of total cost). For another, the additional delaying periods and the additional costs which would automatically come to be suffered by all building employers would turn out to be the scheme's own executioner.

### *VAGUE CLAUSES*

Better and more carefully compiled specifications are the solution to the problem in my view. In the first place there is often the direction clearly expressed to do something which one knows is inimical or contrary to accepted practice, giving rise to doubt and dismay. In the second place there is the injunction to "perform all works so as to obtain compliance with the L.A.'s by-laws"; or "to perform all sanitary and drainage works to the satisfaction of the sanitary authority"—or instructions to that effect—only to be followed by detailed instructions regarding waste pipes, anti-siphonage and soil pipe descriptions which are not in conformity.

As far as the former fault is concerned, fortunately it does not arise so frequently as to cause undue financial concern, but that it arises at all is repugnant to the ideal of setting a competition on fair and equal terms.

Examples from memory of this sort of thing are:—"Provide bituminous felt membrane to 4 in. P.C.C. bed and provide a screed ½ in. thick to receive"—(then here follows a description of the covering, *e.g.*, "1/8th in. thick resin bonded tiles"; or "magnesite flooring by sub-contractor, etc.").

If the faults in this clause are not obvious, I have only to refer to the fact that the weight and number of thicknesses of felt are not stated, nor whether they are secured, or how. Again, what builder has succeeded in putting down on a keyless (and impervious) base a screed coat of this thickness? Furthermore, when one refers to the working practices of floor specialists most of them advocate, indeed, at times expressly stipulate, that a screed of cement and sand not less than 1½ in thick shall be provided as a base to their flooring.

Then one will find very frequently references to scantling and wood trim that are expressly forbidden by the terms of the Timber Economy memorandum. The astute estimator who has a close knowledge and appreciation of timber control is placed at an advantage, in that he can justifiably "price out" his tender to conform to these principles, on the premise that he is on good ground in resisting subsequently a counterclaim by the architect executing for "less than is specified."

Now, although astuteness of this kind is always a great asset in business, by the same token the architect who is also astute will refrain from providing loopholes of this kind, and as a result will be that much nearer to ensuring equity in bids received. On the other hand, referring now to the ½ in. screed, it is always possible that all the estimators in the competition may have automatically allowed for a 1½ in. thick screed. Thus the architect, without realising or knowing that he may already be "paying for" a 1½ in. thick screed, has no defence against a claim for an extra, *i.e.*, 1½ in. screed in lieu of ½ in. screed, as required by sub-contractors at the end of the job. And, in passing, I wonder how many architects might be prepared to allow a price equal to three times the alleged inclusion for a ½ in. screed.

### *COMPLIANCE WITH BY-LAWS*

The second classification of paradoxical weakness has all too many adherents, *e.g.*, "compliance with by-laws." I suppose it is a great temptation, too good to be missed, for the busy or the inept to divest themselves of the responsibility for a concise and complete description, by "throwing the cat in the face of the sanitary authority or, mayhap, the builder."

In the first place, a builder equally with an architect, has no option but to comply with statutory regulations, or regulations which have statutory backing. Why, therefore (unless they seek to absolve their clients from extras in this behalf, or to be absolved from the liability of having to explain the validity of some claim arising out of some authoritative compulsion) do architects lean so often on this verbal buttress? One might just as well confine a specification to the observation that "The whole of the work shall be carried out in accordance with the By-laws, the Public Health Acts, the Restriction of Ribbon Development Act, the Truck Roads Act, the Town and Country Planning Act, the Timber Economy Regulations, the B.S. Specifications and Codes of Practice, the Iron and Steel and Sundry other orders and those sections of the specification of the House Builders Registration Council which are applicable, etc.," and follow this up by a substantial reduction in the scale of charges!

But the height of confusion arises, and with it the sheer gambling element, when the injunction to comply with the "regulations of the sanitary authority" is followed by an attempted description of the layout, which one who is conversant with the regulations knows full well is in some respects inimical, or an out and out contravention. For example, I have seen 1¼ in. and 1½ in. diameter anti-siphonage pipes mentioned; drawn lead traps with 1½ in. seal on waste pipes which are to be connected to a soil pipe; and standard steel casement windows of the type (expressly stated) which do not comply with the by-law in that behalf.

If the fault is that we are all living in a world beset too much by regulation and red tape, then it would appear that those whose metier it is to write specifications are the first to succumb to the toilsome tentacles. For some years previous to the war when serving as a building surveyor to local authorities, it was my experience that many professional men then exhibited a most inadequate knowledge of the by-laws. What the position will be when the new by-laws arrive, and are in force, I shudder to think. Estimators will no doubt be faced with a further crop of anomalies, which will automatically excite the "jumping" or "gambling" instinct, and inevitably lead to even wider discrepancies in the bids made. Unless architects and others who write our specifications themselves make the effort to be in advance of, or at least familiar with all the regulations, and so reduce the possibility of these anomalies that are inimical to good and equitable pricing of building work, then the regulations are doing a dis-service to those who are the life blood of the industry—our employers.

*(Concluded.)*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## OBITUARY

### C. B. Ridgeway, LRIBA

MR. CLEMENT BERNARD RIDGEWAY, LRIBA, sole surviving partner in the firm of Messrs. Wigfull, Inott and Ridgeway, architects, of 22, High-street, Sheffield, has died at the age of 57. He specialised in the alteration and conversion of public-houses, and had a wide reputation in Derbyshire, where he had been responsible for restoring the old-world atmosphere to many premises.

For new buildings he used the most up-to-date methods, and designed the Devonshire Arms in Herries-road, Sheffield, which was believed to be the first public-house of its kind to be erected in pre-fabricated units.

### S. G. Marsh

MR. STANTON GEORGE MARSH, builder and contractor, of Coppice-road, Moseley, Birmingham, has died while on a cruise in the Mediterranean and was buried at sea. He was 58. Widely known in Midland building trade circles, Mr. Marsh was also closely associated with the social life of Birmingham.

### L. H. Talbot

THE DEATH occurred on August 19 of Mr. L. H. Talbot, who was for 33 years a director of J. Jarvis and Sons, Ltd., building and engineering contractors, of Victoria, London.

### Booklet on Radiation

"Radiation from Burning Buildings," by D. I. Lawson, MSc, MIEE, and D. Hird, BSc, is the title of a new technical booklet issued by the Fire Protection Association.

# DETERIORATION OF EXISTING HOUSES

## Rent Reform Committee's Proposals

PROPOSALS for checking the dilapidation and improving the amenities of the eight million rent-controlled houses in Britain are made in a report entitled "Rents, Rates and Reality," which has been drawn up by the Rent Reform Committee of the National Council of Women and submitted to the Ministries of Housing, Works and Health.

The committee state their belief that "only by a combined operation of all political parties, interested authorities and the good will of all concerned" can a solution of the problems of rent restriction and reform be found. The object of the committee is to conduct a publicity campaign to enlighten public opinion and the relevant authorities on the need to save dwellings from becoming unfit for habitation.

The committee recommends that the following steps should be taken:—

*Short-term solution.*—A typical section of an industrial city or town where properties are below recommended and recognised standards or are falling rapidly into decay should be selected for a Rehabilitation and Rent Reform Pilot Project with a view to a national project on similar lines if proved to be successful. Such a project would have as its aim a combined effort between the local authority, landlords and tenants. Houses would be dealt with according to their potential life, as follows:—

(a) Houses with a potential life of, say, 20 years and over: to modernise by installing bath, hot-water system and indoor sanitation if not already installed; to repair, make weatherproof and redecorate.

(b) Houses with a potential life, say, 10-20 years: to install piped hot-water system; to repair, make weatherproof and redecorate.

(c) Houses with a potential life, say, 5-10 years: to make weatherproof and redecorate.

(d) To redesignate for early demolition those which do not warrant (a), (b) or (c).

A fund for loan purposes to be made available at a rate not exceeding that at which local authorities borrow long term for housing purposes to those landlords who cannot finance such repairs or modernisation. Such finance might be made available as an extension of that section of the 1949 Housing Act which permits a grant as a proportion of cost of improvement of property.

That an increase in rent be permitted where the landlord is prepared to undertake repairs and/or modernisation and where the tenant agrees, and that such increase be based on the three standards—maximum, medium and minimum (a, b and c above)—such increase of rent to permit amortisation of the capital sum expended, within the anticipated life of the property.

That increases so permitted shall also ensure "equal rents for equal amenities," i.e., where rents for similar accommodation and amenities in the same type of district vary, they shall be brought into line.

The committee believe that although at the outset this project would appear to be insuperable if undertaken on a national scale, success could be ensured at little or no cost to the tax and rate payer, given the good will of all concerned; that considerable fuel would be saved to the nation by the installation of modern fuel-saving equipment; that the saving in other national social services by improved health and happier homes would be considerable; and that the improved property, by its increased rateable value, would offset the cost of local authority services in promoting the projects.

The problem is not only a practical but a human one, and while it is on the landlords, appropriate authorities and the industrial and commercial organisations the bulk of the work would fall, the voluntary and social service organisations could do much practical work amongst the people whose lives and living conditions would be affected, and thereby assist the realisation of the project.

The committee welcomes the "enterprising and commendable" experiments made by Allied Ironfounders, Ltd., and Federated Foundries, Ltd., in demonstrating possible solutions to the problem, as also do they particularly commend the attempts made in the Netherlands and USA to solve their vital and far-reaching problem which derives from similar sources and conditions.

*Long-term solution.*—That immediate steps be taken to examine the Rent Restriction Acts with a view to the early introduction of a new consolidating Act which, in addition to essential amendments, would:

1. Eliminate discrepancies and anomalies.

2. Permit increases in rent to conform with increases in costs of labour and materials for maintenance and improvements (as is at present permitted for increase in rates), thus insuring future maintenance of newer as well as older houses.

3. Provide penalties where neglect of property by landlord or tenant is unreasonable.

4. Encourage the building of houses and flats to let by providing for an adequate return on the capital involved whether invested by local authorities or others.

The committee's chairman is Mrs. Millicent Pleydell-Bouverie.

REMEMBER

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# OFFICIAL NOTIFICATIONS

## Development Charge

THE collection of outstanding development charge is referred to in circular No. 51/53 which has been issued to local authorities by the Ministry of Housing and Local Government. The circular states that the Central Land Board have drawn the Minister's attention to the fact that in a number of cases local authorities have not made an application for a determination of development charge although the development was begun at some time between July 1, 1948, and November 17, 1952, and is, therefore, still liable to charge. Some authorities may have delayed the making of an application pending the final outcome of the negotiations relating to the compulsory purchase of the land; or they may inadvertently have overlooked the need to comply with the requirements of Part VII of the Act of 1947.

The Board are bound by the Act of 1947 to collect such development charge as is properly payable and are anxious to recover the outstanding charges with the minimum of inconvenience to authorities; the abolition of development charge for development commenced on or after November 18, 1952, makes it the more necessary that the Board should clear their accounts for past cases.

The circular states that authorities should as soon as possible send to the Board a list of all the development begun by the authority between July 1, 1948, and November 17, 1952, which was not exempted from development charge under Section 82 or otherwise under the 1947 Act, or Regulations made under the Act, and for which no application for determination of development charge has yet been lodged. Lists should be sent to the appropriate Regional Office of the Board or, in the case of authorities in Wales and Monmouthshire, to the Office of the Board in Cardiff. If there is no such development in the authority's area a statement to that effect should be sent.

## National Insurance Benefits

REGULATIONS* made under the Industrial Injuries Act, with the approval of the Industrial Injuries Advisory Council, came into force on September 2, and make changes in the conditions for certain benefits under the Industrial Injuries Scheme.

Up to now, the period of trial employment in a man's regular occupation (or work of an equivalent standard) which can be ignored in deciding whether he satisfies the conditions for special hardship allowance has been limited to three months unless the work was carried out on medical advice or with the Minister's approval. This has now been extended to six months. Any person who considers he now satisfies the new conditions should consult his local office.

A further concession is that dependants' allowances will now be payable to certain unemployable people who have been receiving workmen's compensation for injuries sustained before July 5, 1948. This will mean an increase of 21s. 6d. for a wife and 32s. for a wife and child.

The remainder of the regulations is concerned with a number of changes which bring into alignment with the National Insurance Act the Industrial Injuries provisions about persons deemed incapable of work, days of incapacity and night workers.

* The National Insurance (Industrial Injuries) (Benefit) Amended Regulations, 1953. S.I. 1953 No. 1314. Price 4d.

*The Builder*

# CURRENT PRICES OF MATERIALS

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## AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

| | | £ s. d. |
|---|---|---|
| Pit Ballast | per yd. | 1 0 11 |
| Pit Sand | „ | 19 11 |
| Washed Sand | „ | 1 1 9 |
| ¼ in. Shingle | „ | 18 5 |
| ¼ in. Broken Brick | „ | 19 3 |
| Pan Breeze | „ | 9 6 |
| Fine or Coarse Foamed Slag Aggregate | per ton | 2 18 1 |
| 2 yds. of fine and 2.6 yds. of coarse per ton | | |

## CEMENT, etc.

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| | | £ s. d. |
|---|---|---|
| Best British Portland Cement. Standard Specification delivered Charing Cross area. | | |
| 6-ton loads and upwards, site | „ | 4 15 0 |
| 1 to 6 tons, site | „ | 5 4 0 |
| Ferrocrete Rapid Hardening Cement in 6-ton loads and upwards to site | „ | 5 3 0 |
| 1 to 6 ton do. site | „ | 5 12 0 |
| Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices | | |
| Red, Buff or Khaki Colorcrete in 6-ton lots | „ | 6 16 6 |
| Other colours according to colour. | | |
| In 4-ton lots from 210s. 3d. to 434s. 3d. per ton. | | |
| White Portland Cement | „ | 12 15 6 |
| Under 1 ton | per cwt. | 15 3 |
| 417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards | per ton | 6 7 6 |
| Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement. | | |
| Cullamix Tyrolean Finish, £9 2s. 9d. to £10 16s. 3d. (1-ton loads and upwards). | | |
| Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up | „ | 14 0 9 |
| Stourbridge Fireclay, 6-ton loads at Railway Depot, London | „ | 5 15 0 |

## BRICKS

| | | £ s. d. |
|---|---|---|
| Full Loads | | |
| First Hard Stocks | per 1,000 | 11 0 6 |
| Second Hard Stocks | „ | 10 4 6 |
| Mild Stocks | „ | 8 13 6 |
| All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job. | | |
| 2½ in. Nominal Fletton Bricks to sites in W.C. District. Commons | „ | 5 10 0 |
| Cellular do. | „ | 5 10 0 |
| Keyed do. | „ | 5 12 0 |
| Rustics | „ | 6 15 0 |
| Cellular Rustics | „ | 6 15 0 |
| Single Bullnose do. | „ | 6 10 0 |
| Sandfaced | „ | 7 10 0 |
| Cortex Facing Bricks | „ | 6 5 0 |
| Best Blue Pressed Staffs (London Stations) | „ | 23 17 6 |
| Do. Bullnose (London Stations) | „ | 24 11 6 |
| Blue Wire Cuts (London Stations) | „ | 21 10 6 |
| Midhurst Lime Bricks (London Sites) | „ | 9 18 0 |
| Uxbridge Whites (London Sites) | „ | 8 16 6 |
| 2½ in. Best Stourbridge Fire Bricks (London Stations) | „ | 22 3 0 |
| 3 in. do. (London Stations) | „ | 26 11 6 |
| 2½ in. Machine-made Sandfaced Red Facings (London Sites) | „ | 13 9 6 |
| 2½ in. Machine-made Multi Red Facings (London Sites) | „ | 13 14 6 |
| 2½ in. Hand-made Sandfaced Red Facings (London Sites) | „ | 14 3 6 |
| 2½ in. Hand-made Sandfaced Multi Colour Facings (London Sites) | „ | 14 3 6 |
| 2½ in. Surrey Clamp Burnt Multi Stock Facings (London Sites) | „ | 12 14 0 |
| 2½ in. Surrey Kiln Burnt Multi Stock Facings (London Sites) | per 1,000 | 13 12 6 |
| Glazed Bricks (London sites), White, Ivory, Brown— | | |
| Stretchers | „ | 64 0 0 |
| Headers | „ | 63 0 0 |
| Quoins, Bullnose and 4½ in. Flats | „ | 80 0 0 |
| Double Stretchers | „ | 85 0 0 |
| Double Headers | „ | 77 10 0 |
| One side and two ends | „ | 87 0 0 |
| Two sides and one end | „ | 89 10 0 |
| Splays and Squints | „ | 83 0 0 |
| Second quality — 10% Bests. Cream and Buff £3 extra over White. Other colours, hard glaze. £8 10s. 0d. extra over White. | | |

## PARTITION SLABS, etc.

Delivered Central London Area.

| | | £ s. d. |
|---|---|---|
| HOLLOW CLAY PARTITION BLOCKS (Keyed) | | |
| Minimum lorry loads. | | |
| 2 in. 150 yds. | per yd. sup. | 4 3 |
| 2½ in. 135 yds. | „ | 4 6 |
| 3 in. 125 yds. | „ | 5 0 |
| 4 in. (6 cavity) 95 yds. | „ | 6 7 |
| Half blocks at no extra charge. | | |
| CLINKER CONCRETE | | |
| 2 in. 100 yds. | „ | 3 5 |
| 2½ in. 85 yds. | „ | 4 0 |
| 3 in. 75 yds. | „ | 4 8 |
| 4 in. 55 yds. | „ | 5 10 |
| CRANHAM | | |
| 2 in. | „ | 6 5 |
| 2½ in. | „ | 7 1 |
| 3 in. | „ | 8 2 |
| 4 in. | „ | 10 1 |
| 4¼ in. Load bearing quality | „ | 11 1 |
| FLOOR BLOCKS | | |
| 3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads | per 1,000 | 31 10 0 |
| 4 in. do. | „ | 34 13 0 |
| 5 in. do. | „ | 39 7 0 |
| 6 in. do. | „ | 46 16 0 |
| 7 in. do. | „ | 54 1 0 |
| 8 in. do. | „ | 61 15 0 |

## STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

| | Over 2 tons | Over 100 Pieces under 2 tons | Under 100 Pieces under 2 tons |
|---|---|---|---|
| Best Quality | +67½% | +87½% | +97½% |
| B.S.S. Best do. | +10% +67½% | +10% +87½% | +10% +97½% |
| Tested Quality | +37½% +67½% | +37½% +87½% | +37½% +97½% |
| B.S.S. Tested do. | +47½% +67½% | +47½% +87½% | +47½% +97½% |

| | | £ s. d. |
|---|---|---|
| 3 in. Land Drain Pipes (in 12 in. lengths) | per 1,000 | 9 19 0 |
| 4 in. do. | „ | 13 1 0 |
| 6 in. do. | „ | 27 1 0 |

## STONE

| | | £ s. d. |
|---|---|---|
| Bath Stone— | | |
| Monks Park | per ft. cube | 6 8 |
| St. Aldhelm Box Ground | „ | 7 8 |
| Delivered in railway trucks at South Lambeth B.R. Western Region | | |
| Doulting Stone Random Blocks. Delivered London area | „ | 7 5 |
| Beer Stone. Delivered London area | „ | 7 0 |
| Portland Stone— | | |
| Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region | „ | 7 5 |
| Hopton-Wood Stone— | | |
| F.O.R. Quarries, Wirksworth, Derbyshire— | | |
| ¾ in. Slabs for wall lining, sawn two sides in random sizes up to 5 ft. and not over 15 ft. super in area | per ft. sup. | 6 2 |
| 1½ in. Slabs for paving, sawn two sides as above described | „ | 8 6 |
| Yorkshire Stone—Blue Robin Hood Quality. | | |
| Delivered to site London in 6-ton lots. | | |
| 9 in. × 3 in. Rubbed, weathered, throated and stooled cills | per ft. cube | 3 1 9 |
| 12 in. × 6 in. do. do. | „ | 2 4 3 |
| 12 in. × 3 in. Plain coping, twice throated | „ | 1 14 0 |
| 12 in. × 3 in. Weathered and twice throated coping | „ | 2 5 6 |
| 14 in. × 6 in. do. do. | „ | 2 1 0 |
| 4½ in. × 9 in. Plinth, rubbed on top and face | „ | 1 16 9 |
| 3 in. sawn two sides Slabs, random sizes | per ft. sup. | 6 [illegible] |

## STONE—*continued*

| | £ s. d. |
|---|---|
| Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...per ft. cube | 1 2 6 |
| Do. do. fair one edge for fair faced brickwork ... ... ... ... ... ... ... | 1 6 9 |
| Hard York— | |
| 12in. × 2in. Square Steps, rubbed on top and edge per ft. run | 7 10 |
| 14 in. × 3 in. Round-nosed Steps, rubbed on top and front ... ... ... ... ...per ft. cube | 2 2 0 |
| 12 in. × 6 in. Plain Steps, rubbed top and front „ | 1 16 9 |
| 2 in. Rubbed and Jointed Paving, given sizes per ft. sup. | 7 6 |
| 2 in. Sawn Paving, edges squared, in random sizes per yd. sup. | 2 11 9 |

## TILES and PANTILES

| | |
|---|---|
| Delivered London area by road in 6 tons or over per 1,000 | |
| Machine-made Pantiles and French pattern Tiles from Lincolnshire district ... ... ... ... ... | 28 18 6 |
| Hand-made Pantiles Berkshire district ... ... ... | 41 18 6 |
| Hand-made Double Roman Bridgwater district ... ... | 56 17 6 |
| Hand-made 10½ × 6½ tiles Berkshire district ... ... | 12 15 6 |
| Machine-made 10½ × 6½ Staffordshire district ... ... | 13 5 0 |
| Hand-made Hip and Valley tiles per doz. ... ... | 1 8 6 |
| Machine-made Hip and Valley tiles do. ... ... | 1 6 3 |
| Concrete tiles 10½ × 6½ ... ... ... ... ... | 6 18 6 |
| do. Interlocking (49S) ... ... ... ... | 18 9 6 |

NOTE.—Breakage in transit, purchasers' responsibility.

## SLATES

| | |
|---|---|
| First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual. | |
| 24 × 12 ... ... ... ... ... ... ... ... | 100 16 9 |
| 22 × 12 ... ... ... ... ... ... ... ... | 86 6 6 |
| 22 × 11 ... ... ... ... ... ... ... ... | 78 0 6 |
| 20 × 12 ... ... ... ... ... ... ... ... | 73 3 3 |
| 20 × 10 ... ... ... ... ... ... ... ... | 68 10 9 |
| 18 × 10 ... ... ... ... ... ... ... ... | 50 17 0 |
| 18 × 9 ... ... ... ... ... ... ... ... | 43 15 0 |
| 16 × 10 ... ... ... ... ... ... ... ... | 42 18 3 |
| 16 × 8 ... ... ... ... ... ... ... ... | 33 13 3 |

NOTE.—Breakage in transit, purchasers' responsibility.

## TIMBER

| | | | | | |
|---|---|---|---|---|---|
| Softwood— | | | | | |
| Joinery quality ... ... | ...Ex. Wharf per standard | | | | £110 to £130 |
| Carcassing quality ... ... ... | do. | | „ | | £93 to £102 |
| 1 in. Tongued and Grooved Flooring | do. | | „ | £109 | 0 0 |
| Hardwood— | | | | | |
| Mahogany— | African S.E. ... | do. | per ft. cube | 1 | 5 0 |
| do. | Honduras do. ... | do. | „ | 2 | 15 0 |
| Oak | European do. ... | do. | „ | 1 | 17 6 |
| do. | Japanese do. ... | do. | „ | 1 | 15 0 |
| do. | English Logs sawn | do. | „ | 1 | 5 0 |
| Teak | 8 in. average S.E. | do. | „ | 3 | 0 0 |
| Walnut | African Logs sawn | do. | „ | 1 | 1 0 |

## DOORS (in Lots I-II)

| | |
|---|---|
| Delivered London area. | |
| 1½ in. 4 Horizontal Panel. Pattern 4 in. deal | |
| 2 ft. 0 in. × 6 ft. 6 in. ... ... ... each | 1 12 0 |
| 2 ft. 3 in. × 6 ft. 6 in. ... ... ... „ | 1 13 0 |
| 2 ft. 6 in. × 6 ft. 6 in. ... ... ... „ | 1 14 6 |
| 2 ft. 9 in. × 6 ft. 6 in. ... ... ... „ | 1 16 9 |
| 2 in. do., but top panel open. Pattern 4 × G in deal | |
| 2 ft. 6 in. × 6 ft. 6 in. ... ... ... „ | 2 10 6 |
| 2 ft. 9 in. × 6 ft. 6 in. ... ... ... „ | 2 13 6 |
| 2 in. 2 Panel, top panel open. Pattern 2 × G in deal | |
| 2 ft. 6 in. × 6 ft. 6 in. ... ... ... „ | 2 3 9 |
| 2 ft. 9 in. × 6 ft. 6 in. ... ... ... „ | 2 6 6 |

## SUNDRIES

| | |
|---|---|
| Delivered London area | |
| 1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton) ... ... per yd. | 5 8 |
| 1½ in. do. (67 yds. to 1 ton) ... ... „ | 7 4 |
| 2 in. do. (52 yds. to 1 ton) ... ... „ | 8 11½ |
| 2½ in. do. (45 yds. to 1 ton) ... ... „ | 10 3 |
| 3 in. do. (39 yds. to 1 ton) ... ... „ | 11 5½ |
| Quantities under 1 ton add 1d. per ½ in. of thickness. | |
| ½ in. imported insulation Board, quantities over 5,000 sq. ft. per 100 sq. ft. | 2 2 6 |
| ¼ in. Hardboard do. ... ... ... ... ... „ | 2 3 6 |
| ⅛ in. do. do. ... ... ... ... ... „ | 3 2 6 |
| ½ in. Asbestos Flat Building Sheets ...per yd. sup. | 2 11 |
| Roofing Felt, 1-ply ... ... ... ... ... „ | 1 6 |
| do. 2-ply ... ... ... ... ... „ | 1 9 |
| Best Scotch Glue, in slabs ... ... ... ... per ½ cwt. | 5 0 0 |
| do. pearl ... ... ... ... „ | 5 5 0 |
| Croid Glue ... ... ... ... ... 28 lb. | 2 5 0 |
| Cut Nails, 3 in. and up (1-ton lots) ... ... per ton | 59 5 0 |
| Wire Nails, 3 in. (4-cwt. lots) ... ... ... per cwt. | 2 13 8 |
| do. 4 in. and up (4-cwt. lots) ... ... „ | 2 10 3 |

## METALS STEEL JOISTS, ETC.

| | £ s. d. |
|---|---|
| Basis Joists— | |
| 6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in., 12 in. × 6 in. plain cut to lengths delivered London area ... ... ... ... ... ... per ton | 37 2 6 |
| Extra for sizes | |
| 3 in. × 1½ in. ... ... ... ... ... „ | 3 10 0 |
| 3 in. × 3 in., 4 in. × 3 in., 5 in. × 2½ in. ... ... „ | 1 5 0 |
| 4 in. × 1½ in. ... ... ... ... ... „ | 3 0 0 |
| 4½ in. × 1½ in., 24 in. × 7½ in. ... ... ... „ | 2 0 0 |
| 5 in. × 3 in., 22 in. × 7 in. ... ... ... „ | 1 0 0 |

| | £ s. d. |
|---|---|
| 6 in. × 3 in. ... ... ... ... ... ... per ton | 1 10 0 |
| 9 in. × 7 in. ... ... ... ... ... ... „ | 5 0 |
| 10 in. × 4½ in., 12 in. × 5 in. ... ... ... „ | 15 0 |
| 5 in. × 4½ in., 6 in. × 4½ in., 7 in. × 3½ in. 7 in. × 4 in., 8 in. × 4 in., 9 in. × 4 in., 10 in. × 5 in., 10 in. × 8 in., 12 in. × 8 in., 13 in. × 5 in., 14 in. × 5½ in., 14 in. × 6 in. 14 in. × 8 in., 15 in. × 5 in., 15 in. × 6 in. 16 in. × 6 in., 16 in. × 8 in., 18 in. × 6 in., 18 in. × 8 in., 20 in. × 6½ in., 20 in. × 7½ in. ... ... ... ... „ | 10 0 |
| Steel angles average price ... ... ... ... „ | 38 7 6 |
| Steel tees average price ... ... ... ... „ | 39 7 6 |
| Fabricated work delivered London— | |
| R.S. Joists cut and fitted ... ... ... „ | 51 15 0 |
| Compound girders ... ... ... ... ... „ | 57 0 0 |
| Stanchions ... ... ... ... ... „ | 62 0 0 |
| Compound stanchions ... ... ... ... „ | 65 0 0 |
| In Roof Work—Trusses and Purlins ... ... „ | 77 0 0 |
| Average prices not for awkward work. | |
| Mild Steel Ferro-Concrete bars to BSS785 ex London | |
| Stock ⅜ in. diam,, and upwards ... ... ... „ | 37 1 6 |
| ¼ in. diam. ... ... ... ... ... per ton extra | 3 12 0 |
| ⅛ in. do. ... ... ... ... ... ... ... „ | 2 17 0 |
| ⅛ in. do. ... ... ... ... ... ... ... „ | 2 2 0 |
| ½ in. do. ... ... ... ... ... ... ... „ | 1 7 0 |

### MILD STEEL TUBES.

Tubes to BSS1387 and Fittings. List prices and following discounts:

| Galvanised Tube— | | W.I. Fittings | Malleable Fittings |
|---|---|---|---|
| Class A | − 4½% | | |
| Class B | + 4½% | Light +20½% | Malleable List − 39½% + 35% |
| Class C | + 20½% | Heavy +27½% | |
| Black— | | | |
| Class A | − 23½% | | |
| Class B | − 13½% | Light + 8½% | Malleable List − 39½% |
| Class C | − 1½% | Heavy + 16% | |

### C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

| | Gutters | Nozzles | Stop Ends |
|---|---|---|---|
| 3 in. ... ... ... ... ... | 3/1 | 2/9 | /10 |
| 3½ in. ... ... ... ... ... | 3/4½ | 3/– | /10 |
| 4 in. ... ... ... ... ... | 4/4 | 3/4 | 1/2 |
| 4½ in. ... ... ... ... ... | 4/9 | 3/8 | 1/5 |
| 5 in. ... ... ... ... ... | 5/4 | 4/1 | 1/7 |

### C.I.O.G. GUTTERS

| | | | |
|---|---|---|---|
| 3 in. ... ... ... ... ... | 4/– | 3/7 | /11 |
| 3½ in. ... ... ... ... ... | 4/5½ | 3/7 | 1/2 |
| 4 in. ... ... ... ... ... | 4/10½ | 3/8 | 1/6 |
| 4½ in. ... ... ... ... ... | 5/4 | 4/4 | 1/8 |
| 5 in. ... ... ... ... ... | 5/9½ | 4/11 | 1/11 |

### C.I. RAIN-WATER PIPES

| Per yd. in 6-ft. lengths | Pipe | Bends | Branches |
|---|---|---|---|
| 2 in. ... ... ... ... ... | 6/4 | 3/4 | 4/9 |
| 2½ in. ... ... ... ... ... | 6/7 | 3/8 | 6/7 |
| 3 in. ... ... ... ... ... | 7/5 | 4/8 | 7/1 |
| 3½ in. ... ... ... ... ... | 8/4½ | 5/7 | 8/5 |
| 4 in. ... ... ... ... ... | 9/8½ | 6/9 | 9/11 |

### L.C.C. COATED SOIL PIPES

| | | | |
|---|---|---|---|
| 2 in. ... ... ... ... ... | 7/5½ | 5/9 | 7/– |
| 2½ in. ... ... ... ... ... | 7/10½ | 6/4 | 8/8 |
| 3 in. ... ... ... ... ... | 8/10 | 7/– | 10/5 |
| 3½ in. ... ... ... ... ... | 9/11 | 8/8 | 12/1 |
| 4 in. ... ... ... ... ... | 11/3½ | 9/9 | 14/3 |

Above prices for gutters rain-water and soil pipes for under 3 cwt. lot only. Lots over 3 cwt. see List No. 3200 dated May 1, 1952, plus 7½% and tonnage allowance. 4-ton. lots 5 per cent. 2-ton lots 2½ per cent.

### L.C.C. COATED DRAIN PIPES.

In 9-fts.

| | cwt. | qr. | lb. | per yd. | Bends | Branches |
|---|---|---|---|---|---|---|
| 4 in. ... ... ... | 1 | 1 | 17 | 20/1 | 13/10 | 24/5 |
| 6 in. ... ... ... | 2 | 0 | 1 | 29/10 | 28/10 | 49/11 |

### ASBESTOS RAIN-WATER PIPES AND FITTINGS.

Orders under £30 less 12½ per cent. discount.
Orders over £30 less 17½ per cent. discount.

| | | 2 in. | 2½ in. | 3 in. | 4 in. |
|---|---|---|---|---|---|
| Pipes 6-ft. lengths | per yd. | 3/6 | 3/9 | 4/6 | 6/- |
| Shoes ... | each | 2/3 | 2/6 | 3/- | 4/- |
| Single Branches ... | „ | 3/6 | 4/3 | 5/- | 7/- |
| Bends square or obtuse | „ | 2/6 | 2/9 | 3/6 | 5/- |
| Swan Necks 4½ in. proj. | „ | 2/9 | 3/6 | 4/- | 5/6 |
| do. 6 in. do. | „ | 3/- | 3/6 | 4/6 | 6/- |

### ASBESTOS O.G. GUTTERS AND FITTINGS.

| | | 4 in. | 4½ in. | 5 in. | 6 in. |
|---|---|---|---|---|---|
| Gutters 6-ft. lengths | per yd. | 3/3 | 3/7 | 4/3 | 5/2 |
| Drop ends ... | each | 2/3 | 2/4 | 2/7 | 3/3 |
| Stop Ends ... | „ | /9 | /10 | /11 | 1/1 |
| Angles and nozzles | „ | 2/8 | 3/1 | 3/7 | 4/3 |
| Union Clips ... | „ | 1/4 | 1/7 | 1/11 | 2/3 |

### ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

| | | 3 in. | 4 in. | 4½ in. | 5 in. | 6 in. |
|---|---|---|---|---|---|---|
| Gutters 6-ft. lengths | per yd. | 2/4 | 2/9 | 2/10 | 3/4 | 4/8 |
| Drop ends ... ... | each | 2/– | 2/3 | 2/6 | 2/9 | 4/- |
| Stop ends ... ... | „ | /8 | /9 | /10 | /11 | 1/1 |
| Angles ... ... | „ | 2/3 | 2/6 | 2/9 | 3/- | 4/- |
| Nozzles ... ... | „ | 2/- | 2/3 | 2/6 | 2/9 | 4/- |
| Union Clips ... ... | „ | /11 | 1/- | 1/1 | 1/3 | 1/10 |

## METALS—*Continued.*

| | Per ton basis in London £ s. d. |
|---|---|
| Iron—Staffordshire Crown Merchant Quality | 39 10 0 |
| Mild Steel Bars | 37 8 0 |
| Mild Steel Hoops | 38 3 0 |

| | Ex Merchant's Stock per ton Two-ton lots £ s. d. |
|---|---|
| Soft sheets C.R. and C.A.— | |
| 20 gauge | 45 12 6 |
| 24 gauge | 46 17 6 |
| 26 gauge | 48 17 6 |
| Galvanised Corrugated sheets 6 ft. to 9 ft.— | |
| 20 gauge | 52 17 0 |
| 24 gauge | 54 17 0 |
| 26 gauge | 57 12 0 |
| Galvanised Flat sheets C.R. and C.A.— | |
| 20 gauge | 53 17 0 |
| 24 gauge | 55 17 0 |
| 26 gauge | 58 12 0 |

Metal Windows.—Standard Metal Windows, B.S. 940. Prices on application British Metal Window Manufacturers' Association, Ltd.

### Plumbers' Brass Work, Copper, Zinc, etc.

Delivered in London area

| All per doz. | M.O.H. ½ in. | ¾ in. | 1 in. | 1¼ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|---|
| Screwdown bib cocks Crutch head for iron | 66/6 | 98/10 | | | | |
| Toilet bib cocks for iron | 88/4 | 127/4 | | | | |
| Screw down stop cocks for iron | 57/- | 84/6 | 162/6 | 307/2 | 399/- | 763/10 |
| do. with two unions for lead | 77/- | 114/- | 202/4 | 427/6 | 575/9 | 1048/10 |
| Double nut boiler screws | 14/3 | 20/- | 36/1 | 37/- | 51/4 | 72/2 |
| Heavy Croydon ball valves | 62/9 | 144/6 | 248/- | 490/2 | 615/6 | |
| Plumbers' union brass lead to iron | 16/2 | 20/8 | 30/- | 52/3 | 64/6 | 125/6 |
| | 1¼ in. | 1½ in. | 2 in. | 3 in. | 3½ in. | 4 in. |
| Caps and screws | 25/8 | 31/4 | 45/7 | 71/3 | 91/2 | 118/9 |
| Brass sleeves | | 23/9 | 23/9 | 42/9 | 57/- | 28/- |
| | 1¼ × 6 lb. | | 1½ × 6 lb. | 2 × 7 lb. | 3 × 7 lb. | |
| Lead P. trap with brass cleaning screws | 60/- | | 75/- | 120/- | 205/- | |
| Lead S. trap do. | 72/6 | | 90/- | 147/6 | 265/- | |

| Solder | s. d. |
|---|---|
| Plumbers' | per lb. 2 9 |
| Tinmen's | „ 3 4 |
| Blow pipe | „ 3 6 |

Copper tubes BSS 659/1944 on the basic price of 26¾d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

| | Extra d. | | d. |
|---|---|---|---|
| ¼ in. × 19 gauge | 11⅛ | Total per lb. | 38 |
| ¼ in. × 19 „ | 10½ | „ „ | 36½ |
| 1 in. × 18 „ | 8⅝ | „ „ | 35 |
| 1¼ in. × 18 „ | 8⅛ | „ „ | 34½ |
| 1½ in. × 18 „ | 8⅛ | „ „ | 34½ |
| 2 in. × 17 „ | 9⅛ | „ „ | 36 |

| | | £ s. d. |
|---|---|---|
| Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras | per ton | 284 0 0 |
| Sheet Zinc, 10 gauge, 5 cwt. lots upwards | per cwt. | 6 13 0 |
| do. 12 gauge do. | „ | 6 11 0 |
| Brass tubes basic price, plus gauge and manufacturing extras | per lb. | 1 10 |

## LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

| | | £ s. d. |
|---|---|---|
| Lead Sheet, English, 3½ lb. substance and upwards | per ton | 135 0 0 |
| Lead Water Pipe in coils | „ | 136 5 0 |
| Lead Soil Pipe, 10 ft. or over 2 in. to 4 in. dia. | „ | 137 15 0 |
| do. over 4 in. dia. | „ | 139 15 0 |
| Lead Gas or Untinned Compo pipe | „ | 137 15 0 |
| Extras over Basis for quantities under 1 ton | | |
| 5 cwt. and under 1 ton | per cwt. | 2 0 |
| 3 cwt. do 5 cwt. | „ | 4 0 |
| 1 cwt. do. 3 cwt. | „ | 6 0 |

Smaller quantities than 1 cwt. priced specially.
Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.
Allowance for Old Lead, collected £87 10s. 0d. per ton weighed at buyer's works.

## PLASTER, etc.

| | | £ s. d. |
|---|---|---|
| Coarse Pink in 1-ton loads and over Delivered on Site | per ton | 7 3 3 |
| do. White do. do. | „ | 7 11 0 |
| Sirapite Coarse do. do. | „ | 7 6 3 |
| do. Fine do. do. | „ | 7 14 3 |
| Blue Lias Lime in 6-ton loads | „ | 6 19 9 |
| Hydrated Lime do. | „ | 5 9 0 |
| Lump Lime do. | „ | 4 18 6 |
| White Keen's or Parian Cement in 1-ton loads | „ | 10 0 9 |
| Pink Keen's or Parian Cement in 1-ton loads | „ | 9 15 3 |
| Granite Chips in 6-ton loads | „ | 2 6 3 |
| Hair | per cwt. | 4 17 6 |
| Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site | per yd. | 2 3 |
| Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery Delivered site | „ | 2 6 |

## PAINT AND DISTEMPER

Delivered London area.

| | | £ s. d. |
|---|---|---|
| Ceiling Distemper | per cwt. | 1 12 0 |
| Washable Distemper | „ | 5 12 0 |
| Gloss Paint | per gal. | 2 15 0 |
| Snowcem cement paint (in 1 cwt. drums) | per cwt. | 3 11 0 |

### Lead Products and Oils.

| | | |
|---|---|---|
| Ground White Lead 5 cwt. casks | per cwt. | 8 5 3 |
| 1 cwt. kegs | „ | 8 12 3 |
| Genuine White Lead Paint, 20 gal. lots in 1 gal. tins | per gal. | 2 18 0 |
| Genuine Red Lead, Dry, 1 cwt. keg | per cwt. | 6 16 9 |
| Genuine Linseed Oil Putty, 1 cwt. keg | „ | 2 17 6 |
| Size XD quality, 28 lb. | per tin | 9 0 |
| Raw Linseed Oil (5 gal.) Drums extra | per gal. | 18 6 |
| Boiled Linseed Oil (5 gal.) do. | „ | 18 11 |

### Sundries.

| | | |
|---|---|---|
| Turpentine substitute (5 gal.) Drums extra | „ | 5 6½ |
| do. do. (40 gal. drum) do | „ | 4 9 |
| Solignum, Brown (5 gal. cans), Exterior | „ | 6 6 |
| Creosote (40 gal. barrels) | „ | 2 0 |
| Paste Powder (1 lb. packets) | per lb. | 1 6 |
| White Lining Paper | per piece | 1 6 |

## VARNISHES, etc.

Delivered London area.

| | | |
|---|---|---|
| Oak Varnish, Outside or Inside | per gal. | 1 12 6 |
| Oak Pale Copal do. | „ | 1 15 0 |
| Hard Drying Oak for Inside | „ | 1 17 6 |
| Crystal Paper Varnish do. | „ | 1 15 0 |
| Eggshell Flat Varnish do. | „ | 2 2 6 |
| Finest Carriage Varnish | „ | 2 10 0 |
| Front Door Varnish | „ | 1 17 6 |
| Japan Gold Size | „ | 1 10 0 |
| Black Japan | „ | 1 5 0 |
| Brunswick Black | „ | 1 0 0 |
| Berlin Black | „ | 1 5 0 |
| Terebene | „ | 1 5 0 |
| Knotting (1 gal. bottles free) | „ | 2 0 0 |
| French and Brush Polish (do.) | „ | 1 13 0 |

## GLASS

Delivered London area.

| | Per ft. super s. d. |
|---|---|
| 18 oz. Sheet Glass, Ordinary Glazing Quality. Cut Sizes | 5½ |
| 24 oz. „ „ „ „ „ „ „ | 7½ |
| 26 oz. „ „ „ „ „ „ „ | 9½ |
| 32 oz. „ „ „ „ „ „ „ | 1 0 |
| ⅛ in. Rolled Plate | 9 |
| ⅜ in. and ¼ in. Rough Cast | 1 0 |
| ⅛ in. Figured Rolled and Cathedral, Standard patterns : White | 9 |
| do. Standard Tints | 1 4½ |
| do. Special Tints | 2 9 |
| ⅛ in Cross Flexon, Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating | 1 1 |
| ¼ in. Wired Cast | 1 2 |
| ¼ in. Georgian Wired Cast | 1 2½ |

| Hollow Glass Blocks— | Each |
|---|---|
| P.B.2 5½ × 5½ × 3⅝ in. | 2 9 |
| P.B.3 7½ × 7½ × 3½ in. | 4 2 |
| P.B.32 7½ × 7½ × 3⅝ in. | 4 2 |
| Radiused Corner Blocks to match up with— | |
| P.B.2 | 5 3 |
| P.B.3 | 6 9 |
| P.B.32 | 6 9 |

| ¼ in. Polished Plate Glass, G.G. Quality— | Per ft. super |
|---|---|
| In plates not exceeding 2 ft. sup. | 3 7 |
| „ „ „ „ 5 ft. sup. | 4 5 |
| „ „ „ „ 45 ft. sup. | 5 1 |
| „ „ „ „ 100 ft. sup. | 5 6 |

¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 96 in. high or 160 in. wide. G.G. quality—

| | |
|---|---|
| Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways | 8 4 |
| Not exceeding 180 ft. sup., or ditto | 11 3 |
| Not exceeding 200 ft. sup., or ditto | 16 0 |

Plates exceeding 200 ft. sup., prices on application.
Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass.
The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

| Description of Glass. | Minimum quantity. | Per ft. super. s. d. |
|---|---|---|
| 18 oz. sheet O.Q. | 3,000 | 4 |
| 24 oz. „ „ | 2,000 | 5½ |
| 26 oz. „ „ | 2,000 | 7½ |
| 32 oz. „ „ | 2,000 | 9½ |
| ⅛ in. Rolled Plate | 1,000 | 7½ |
| ⅛ in. Figured Rolled and Cathedral Standard Patterns, White | 1,000 | 7½ |
| ⅛ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte | 1,000 | 10½ |
| ⅜ in. and ¼ in. Rolled Plate or Rough Cast | 2,000 | 10½ |
| ¼ in. Wired Cast, Hexagonal | 2,000 | 1 0½ |
| ¼ in. Georgian Wired Cast | 2,000 | 1 0½ |

*The Builder*

# CURRENT RATES OF WAGES

**AS FROM FEBRUARY 2, 1953. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

## KEY TO SCHEDULE OF GRADE RATES.

| Grade Classification. | A | A1 | A2 | A3 |
|---|---|---|---|---|
| Craftsmen ... ... ... | 3/6½ | 3/6 | 3/5½ | 3/5 |
| Labourers ... ... ... | 3/1 | 3/0½ | 3/0 | 2/11½ |

| *Town.* | *Grade.* |
|---|---|
| Aberavon | A |
| Aberdare | A |
| Abergavenny | A |
| Abingdon | A2 |
| Accrington | A |
| Addlestone | A |
| Aldeburgh | A2 |
| Aldershot District | A2 |
| Alfreton U.D. | A |
| Alnwick | A1 |
| Altrincham | A |
| Amble | A1 |
| Amersham | A1 |
| Ammanford | A |
| Andover | A2 |
| Ardingly | A2 |
| Arundel | A2 |
| Ascot | A2 |
| Ashby-de-la-Zouch U.D. | A |
| Ashby Woulds U.D. | A |
| Ashford (Kent) | A2 |
| Ashford (Middlesex) | A |
| Ashington | A |
| Ashtead | A |
| Ashton-under-Lyne | A |
| Aspatria and Brayton | A2 |
| Atherstone R.D. (parts of) | A |
| Aylesbury | A2 |
| Aylesby (Yorks) | A |
| Aylesham | A2 |
| Bagshot | A2 |
| Bakewell U.D. | A2 |
| Banbury | A2 |
| Barnard Castle U.D. | A |
| Barnoldswick U.D. | A1 |
| Barnsley | A |
| Barrow-in-Furness | A |
| Barrow-upon-Soar R.D. (exc. Thrussington A2) | A |
| Barry | A |
| Basford R.D. (exc. Willough-by-on-the-Wolds A2) | A |
| Basingstoke | A1 |
| Bath | A |
| Batley | A |
| Baxterley | A1 |
| Beaconsfield & District | A1 |
| Beamish | A |
| Bearl | A |
| Bearpark | A |
| Beccles | A2 |
| Bedale R.D. | A |
| Bedford | A |
| Bedlington | A |
| Bedwas | A |
| Beeston & Stapleford U.D. | A |
| Belper U.D. | A |
| Belton | A |
| Berkhamsted | A |
| Berrington | A1 |
| Berwick District | A |
| Beverley | A |
| Bexhill-on-Sea | A2 |
| Biggleswade | A2 |
| Billericay | A |
| Billing | A |
| Billingham U.D. | A |
| Bilsthorpe | A |
| Birchington | A2 |
| Birkenhead | * |
| Birmingham C.B. | †A |
| Bishop Auckland | A |
| Bishop's Stortford | A |
| Bispham | A |
| Blackburn | A |
| Blackpool | A |
| Blackwell R.D. | A |
| Blaydon U.D. | A |
| Blidworth | A |
| Blyth | A |
| Bognor Regis | A2 |
| Boldon U.D. | A |
| Bolsover U.D. | A |
| Bolton | A |
| Bourne End | A1 |
| Bournemouth District | A |
| Bracknell | A2 |
| Bradford | A |
| Bradford-on-Avon | A2 |
| Braintree | A1 |
| Breconshire, County of... | ‡A2 |
| Brent Knoll | A2 |
| Brentwood | A |
| Bridlington | A |
| Brierfield | A |
| Brighouse | A |
| Brighton | A |
| Bristol | A |
| Broadstairs | A2 |
| Bromsgrove U.D. | A |
| Brough | A |
| Broughton (Cheshire) | A |
| Buckley | A |
| Bungay | A2 |
| Burnham-on-Crouch | A2 |
| Burnley | A |
| Burton-on-Trent C.B. | A |
| Bury | A |
| Bury St. Edmunds | A1 |
| Buxton | A |
| Byfleet | A1 |
| Calder Valley | A |
| Cambridge | A |
| Cannock U.D. | A |
| Canterbury | A2 |
| Cardiff | A |
| Cardiganshire, County of | ‡A2 |
| Carlisle | A |
| Carmarthenshire, Cnty of | ‡A2 |
| Carnarvonshire, Cnty. of | ‡A3 |
| Carnforth | A |
| Castleford | A |
| Caterham | A |
| Chapel-en-le-Frith | A |
| Charmy Down | A |
| Chatham & District | A1 |
| Cheadle (Staffs) R.D. | A |
| Chelmsford | A |
| Cheltenham | A |
| Chepstow | A1 |
| Chertsey | A |
| Chester | A |
| Chesterfield M.B. | A |
| Chesterfield R.D. | A |
| Chester-le-Street U.D. | A |
| Chichester | A2 |
| Chippenham (inc. Chippen-ham Within and Harden-huish | A2 |
| Chorley | A |
| Clacton | A1 |
| Cleethorpes | A |
| Clevedon | A1 |
| Cleveleys | A |
| Clitheroe | A |
| Coalville U.D. | A |
| Cobham (Surrey) | A |
| Colchester | A |
| Colne | A |
| Colwyn Bay | A1 |
| Congleton | A1 |
| Consett | A |
| Conway | A1 |
| Cornwall, County of | ‡A2 |
| Coventry C.B. | A |
| Cranbrook | A2 |
| Cranleigh | A2 |
| Crawley (Sussex) | A2 |
| Crewe | A |
| Cromer | A1 |
| Crowborough | A2 |
| Cuckfield | A2 |
| Dalton-in-Furness | A |
| Darlington District | A |
| Darwen | A |
| Deal | A2 |
| Denbigh Town | A2 |
| Derby C.B. | A |
| Devizes | A2 |
| Devon, County of | ‡A2 |
| Dewsbury | A |
| Didcot | A2 |
| Diss | A2 |
| Doncaster C.B. | A |
| Dorking | A |
| Dorset, County of (except-ing Poole, Swanage and Wimborne A1) | A2 |
| Dover | A2 |
| Dovercourt | A |
| Driffield U.D. | A1 |
| Droitwich M.B. | A1 |
| Dudley M.B. | A |
| Dunstable | A |
| Durham City | A |
| Eastbourne | A1 |
| E. Glam. & Mon. Val. | A |
| East Grinstead District | A2 |
| Eastwood (Notts.) U.D. | A |
| Ebbw Vale & District | A |
| Edenbridge | A2 |
| Ely | A2 |
| Epping | A |
| Exeter | A |
| Fakenham | A2 |
| Falmouth | A2 |
| Fareham | A |
| Faversham | A2 |
| Felixstowe | A1 |
| Filey U.D. | A |
| Fleetwood | A |
| Flint | A |
| Folkestone | A2 |
| Frinton | A1 |
| Frome | A1 |
| Gainsborough U.D. | A |
| Gateshead | A |
| Gillingham (Kent) | A1 |
| Glossop | A |
| Gloucester | A |
| Gloucestershire, Cnty. of | ‡A2 |
| Godalming | A2 |
| Goole M.B. | A |
| Gosport | A |
| Grantham M.B. | A |
| Gravesend | A |
| Great Yarmouth | A |
| Grimsby C.B. & R.D.(part) | A |
| Grimsby R.D. (remainder) | A2 |
| Guildford District | A2 |
| Guilsborough | A1 |
| Guiseley | A |
| Halesowen M.B. | A |
| Halifax | A |
| Halstead | A2 |
| Haresfield | A1 |
| Harlow | A |
| Harpenden | A |
| Harrogate | A |
| Hartlepool | A |
| Harwich | A |
| Haslemere | A2 |
| Hastings | A2 |
| Hatfield (Herts.) | A |
| Haywards Heath | A2 |
| Hemel Hempstead | A |
| Henley-on-Thames | A2 |
| Hereford | A2 |
| Herefordshire, Cnty. of | ‡A2 |
| Herne Bay | A2 |
| Hertford | A |
| Hexham U.D. | A |
| Heysham | A |
| High Wycombe | A1 |
| Highworth | A2 |
| Hinckley U.D. | A |
| Hitchin | A |
| Hoddesdon | A |
| Horley | A2 |
| Horsham | A2 |
| Horwich | A |
| Huddersfield | A |
| Hull | A |
| Hunstanton | A2 |
| Huntingdon (Staffs) | A |
| Ilkley | A |
| Ingatestone | A1 |
| Ipswich | A |
| Isle of Sheppey | A2 |
| Isle of Thanet | A2 |
| Isle of Wight | A2 |
| Jarrow M.B. | A |
| Keighley | A |
| Kendal | A |
| Kenilworth U.D. | A |
| Kettering M.B. | A |
| Keynsham | A |
| Kidderminster M.B. | A |
| King's Lynn | A1 |
| Kingskerswell | A1 |
| Kingsteignton | A1 |
| Kirkham | A |
| Knaresborough U.D. | A |
| Knowle | A1 |
| Lancaster | A |
| Leamington M. B. | A |
| Leatherhead | A |
| Leeds | A |
| Leicester C.B. | A |
| Leighton Buzzard | A1 |
| Letchworth | A1 |
| Lewes | A2 |
| Lichfield M.B. | A |
| Lincoln C.B. | A |
| Littlehampton | A2 |
| Liverpool | * |
| Llandudno | A1 |
| Llanelly | A |
| London | * |
| Long Eaton | A |
| Loughborough M.B. | A |
| Louth M.B. | A2 |
| Lowestoft | A |
| Loxton | A2 |
| Luton | A |
| Lyneham (Devon) | A2 |
| Macclesfield | A |
| Maidenhead | A1 |
| Maidstone | A1 |
| Maltby | A |
| Maldon (Essex) | A1 |
| Malvern U.D. | A1 |
| Manchester | A |
| Manningtree | A1 |
| Mansfield M.B. | A |
| March | A2 |
| Margate | A2 |
| Market Harborough U.D. | A |
| Maryport | A |
| Matlock U.D. | A1 |
| Melksham | A2 |
| Melton Constable | A2 |
| Melton Mowbray U.D. | A1 |
| Merthyr | A |
| Middlesbrough | A |
| Middleton | A |
| Middlewich | A |
| Milford Haven | A1 |
| Morecambe | A |
| Morley | A |
| Mundesley | A2 |
| Nantwich | A |
| Nelson | A |
| Newark-on-Trent R.D. | A1 |
| Newbury | A2 |
| Newcastle-on-Tyne | A |
| Newcastle-under-Lyme | A |
| New Forest District | A1 |
| Newmarket | A1 |
| Newport, Mon. | A |
| Newport Pagnell | A2 |
| Newton Abbot | A1 |
| Northallerton Dist. | A |
| Northampton C.B. | A |
| North Shields | A |
| Norton Radstock | A1 |
| Norwich | A |
| Nottingham C.B. | A |
| Nuneaton M.B. | A |
| Oakham U.D. | A2 |
| Oldham | A |
| Ongar | A |
| Ormskirk | A |
| Ossett and Horbury | A |
| Oxford | A |
| Oxted | A1 |
| Paignton | A1 |
| Peterborough | A |
| " Soke | A1 |
| Pickering | A3 |
| Plymouth | A |
| Pontefract | A |
| Pontypridd District | A |
| Portishead | A |
| Portland Stoneyards | A |
| Portsmouth | A |
| Port Talbot | A |
| Preston | A |
| Pudsey | A |
| Pulborough | A2 |
| Radnorshire, County of | ‡A2 |
| Ramsgate | A2 |
| Rayleigh | A |
| Reading | A |
| Redcar B. | A |
| Redditch U.D. | A |
| Redhill and Reigate | A |
| Ripon | A3 |
| Rochdale | A |
| Rochester | A1 |
| Rotherham | A |
| Rugby M.B. | A |
| Saffron Walden | A2 |
| St. Albans | A |
| St. Helens | A |
| St. Neots | A2 |
| Salisbury City | A2 |
| Salisbury Plain | A2 |
| Sawbridgeworth | A |
| Saxmundham | A2 |
| Scarborough | A |
| Scunthorpe | A |
| Selby | A |
| Sevenoaks | A1 |
| Sheerness | A2 |
| Sheffield | A |
| Shipley | A |
| Shoeburyness | A |
| Shoreham | A |
| Shrewsbury M.B. | A |
| Sittingbourne | A2 |
| Skegness U.D. | A1 |
| Skipton U.D. | A |
| Sleaford U.D. | A2 |
| Slough | A1 |
| Smethwick C.B. | †A |
| Snettisham | A2 |
| Somerset, County of | ‡A2 |
| Southampton | A |
| Southend-on-Sea Dist. | A |
| Southport | A |
| South Shields C.B. | A |
| Spalding U.D. | A2 |
| Stafford M.B. | A |
| Staines | A |
| Stamford M.B. | A1 |
| Stantonwick | A |
| Stevenage | A |
| Stockport | A |
| Stockton R.D. | A |
| Stockton-on-Tees | A |
| Stoke-on-Trent C.B. | A |
| Stoke Orchard | A1 |
| Stourbridge M.B. | A |
| Stourport U.D. | A |
| Stowmarket | A1 |
| Stratford-on-Avon M.B. | A1 |
| Sunderland District | A |
| Sunningdale | A1 |
| Sutton Coldfield M.B. | A |
| Swaffham | A2 |
| Swanage | A1 |
| Swansea | A |
| Swindon | A1 |
| Swinton U.D. | A |
| Tamworth M.B. | A |
| Tenterden | A2 |
| Tewkesbury | A1 |
| Thames Haven | A |
| Thetford | A2 |
| Thorpe Bay | A |
| Thurrock U.D.C. Area | A |
| " North of, to Billericay | A |
| Tilbury | A |
| Todmorden | A |
| Tonbridge | A1 |
| Torquay | A1 |
| Totnes | A1 |
| Trowbridge | A2 |
| Tunbridge Wells | A1 |
| Tynemouth C.B. | A |
| Uppingham (Salop) | A1 |
| Uttoxeter U.D. | A2 |
| Wakefield | A |
| Wallsend B. | A |
| Walsall C.B. | A |
| Walsden | A |
| Walton-on-Naze | A1 |
| Ware | A |
| Warminster | A2 |
| Warrington | A |
| Warwick M.B. | A |
| Wellington U.D. | A |
| Wells (Norfolk) | A2 |
| Welwyn | A |
| Welwyn Gar. City | A |
| West Bromwich C.B. | A |
| Westbury | A2 |
| Westcliff-on-Sea | A |
| Westerham | A1 |
| Weston-super-Mare | A1 |
| Weybridge | A |
| Weymouth | A1 |
| Whitby U.D. | A1 |
| Whitstable and District | A2 |
| Wickford | A |
| Widnes | A |
| Wigan | A2 |
| Wigton | A |
| Willington | A |
| Wilmslow | A |
| Wilts. County of | ‡A2 |
| Winchester | A1 |
| Windermere | A3 |
| Windsor and Eton | A1 |
| Wisbech | A2 |
| Witham | A1 |
| Woking (District) | A1 |
| Wokingham | A2 |
| Wolverhampton C.B. | A |
| Woodbridge | A2 |
| Worcester C.B. | A |
| Workington | A |
| Worksop M.B. | A |
| Worthing | A2 |
| Wrexham (incl. Cefn) | A |
| Wroughton | A1 |
| Wylam | A |
| Wymondham | A2 |
| York | A |

* For Birkenhead, Liverpool, and London the rates are:—Craftsmen, 3s. 8d.; Labourers, 3s. 2½d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 3s. 7½d. Labourers, 3s. 2d. † Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2s. 7d. per hour. Women introduced to carry out work other than craft processes, 2s. 3d. per hour.

For Building Trade Wages in Scotland see page 373

# BUILDING EXHIBITION

## Largest Display for Jubilee Year

THE Building Trades Exhibition will celebrate its Silver Jubilee this year at Olympia, and when the doors are opened on November 18 the three halls at Olympia will contain nearly 600 stands which will provide what is claimed to be the largest and most representative display of its kind ever seen in this country.

The responsibility of organising the Silver Jubilee Exhibition has been undertaken by Mrs. Molly Montgomery, the widow of Mr. Hugh Montgomery, who is maintaining the traditions of the Building Exhibition by including several features of interest to all architects, builders, contractors and local authorities.

In addition she has set out to encourage exports by inviting more overseas buyers than ever. Steps have been taken to ensure that details of the exhibition shall be known in every country and, as a result of these efforts, it is learned that already parties are being arranged by air lines and overseas trade journals to visit Olympia during the show.

At Olympia a reception room will be available to all visitors where, throughout the exhibition, representatives of the Commercial Relations Branch of the Board of Trade will be present to assist prospective buyers from overseas.

### Special Features

Prefabrication and prestressed concrete will provide the two main features of the exhibition.

Prefabricated structures will be grouped in the Empire Hall. A number of new systems suitable for houses, schools or factories will be shown for the first time. It is significant that £7m. worth of prefabricated buildings have found their way to the export markets of the world since the last exhibition two years ago.

To-day manufacturers are concentrating considerable effort to reduce the weight of standard parts and are also making special packing arrangements to save freight costs. Insect-resisting materials are being used in some systems and great attention is being paid to the problems provided by extremes of temperature.

Not all the prefabricated buildings on show, however, will have been designed for the export markets. In many instances the needs of local authorities in this country have been given priority attention.

### Prestressed Concrete

As in the past Mrs. Montgomery has arranged for a prominent display covering the development of a basic material essential to modern building requirements. This year it is prestressed concrete, the most discussed technique to-day. Organised by the Prestressed Concrete Development Group, all known methods of prestressing will be demonstrated.

British builders have profited by the earlier experiments and the experience of the pioneers, notably the French, in this valuable technique. Prestressing has become one of the industry's most successful exports. It was recently announced that the 15-mile long Tampa Bay Bridge in Florida has 3½ miles or 363 spans of prestressed concrete, designed on the British Lee-McCall system, post-tensioned with special alloy bars exported from Britain. Displays of post-tensioned concrete will be seen at Olympia.

### General Exhibits

Every type of machinery and plant used in the building industry will find a place in the exhibition. Many manufacturers will show new or redesigned plant and tools to assist production. Woodworking machinery is an important case in point and the exhibits will range from the largest equipment for a complete sawmill to small hand-powered tools.

In addition to the exhibits of the Department of Scientific and Industrial Research and the Building Research Station, plant and equipment developed as the result of close co-operation with those organisations will be displayed by a number of leading manufacturers, and the Ministry of Works, the Ministry of Housing and Local Government and HM Stationery Office are among the Government Departments giving their closest support.

The exhibition will be open each day, except Sundays, from 10 a.m. to 8 p.m. until December 2.

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### Fireproofing Process

Birmingham's 540 American-type temporary prefabricated bungalows are being given a fireproof spraying and complete internal redecoration. The fireproofing follows the burning-out of three of the prefabs in less than five minutes. To overcome condensation, the rooms have been redecorated with emulsion paint. Tenants are not to be allowed to use wallpaper in future.

"STIC B"
STONE COVERING
A DECORATIVE AND WATERPROOFING
TREATMENT FOR CONCRETE
CEMENT RENDERING
BRICKWORK, ASBESTOS, ETC.
"STIC B" PAINT SALES LTD.
47, WHITEHALL, S.W.1.
WHITEHALL 9958

# ELECTRICIANS' STRIKE SPREADING

## Union's New Tactics

EARLIER this week the strike by members of the Electrical Trades Union was spreading, and little progress was being made in settling the dispute in the electrical contracting industry. By Tuesday night 2,000 electricians were idle, and MR. W. C. STEVENS, the union's general secretary, said that the number would increase gradually until by next Monday it would reach 5,000.

According to the union, all the men who were on strike last week, and who returned so that negotiations could be resumed on Monday of this week, have again obeyed their leaders' instructions to stop work. In addition, electricians employed by two firms in London and one in Manchester have joined in. This may affect work on the new television studios at White City, on an extension to University College, London, at a West End store, at a newspaper office, and on several building sites in and near Manchester.

A new development occurred on Tuesday, when the Union began to call strikes of the employees of the firms which are directly represented on the employers' side of the national joint council for the industry. "All the people who sat round their side of the table at the conference," said Mr. Stevens, "are down on our list for attention."

These tactics were described by MR. L. C. PENWILL, secretary of the employers' association, on Tuesday, as threatening the whole negotiating machinery of the industry. If an employer thought that he would be singled out for attack because he took part in national negotiations none would consent to serve on the industry's joint council

# NEWS IN BRIEF

### Gatwick Airport Plan

In a letter to Mr. Gough, Conservative MP for Horsham, Mr. Lennox-Boyd, Minister of Civil Aviation, has agreed to attend a public meeting to discuss, and answer criticisms of, the project to extend Gatwick Airport as an alternative to London Airport.

### "Johnson House," SW1

In connection with the illustrated article on "Johnson House," SW1, the Metropolitan Police housing scheme, which appeared in our issue of August 28, we have been informed that the whole of the reinforced concrete frame and floors above the basement level of this building were carried out by Caxton Floors, Ltd.

### Fuel Supplies in Special Housing

Among the matters needing special thought in the planning and design of housing schemes for special purposes is that of fuel supplies and a new booklet, "Gas and Coke in Housing for Special Purposes" (The Gas Council, 1, Grosvenor-place, London, SW1, price 2s.), sets out to present in concise form a clear picture of the services which this industry can offer. Coke-fired appliances for space heating and water heating, gas fires, water-heaters, cookers, refrigerators and laundry equipment are described and illustrated.

# PERSONAL COLUMN

MR. ROBERT E. MORRIS has announced that he will relinquish his present position of building technician in the Norwich City Engineer's office and take up his new appointment as building works manager for the Wolverhampton Corporation on September 14.

# OVERSEAS BUILDING

**[From Our Own Correspondents]**

* *Canada.*—Mr. Henry McTigue, of McTigue Sales and Services Regd., 3820, Courtrai-avenue, Montreal, is interested in handling the sale of a line of hand or electrically operated hoists (blocks and tackles), and would like to hear from UK manufacturers of these articles who are interested in appointing an agent for the sale of these products.

Interested manufacturers are asked to write direct to Mr. McTigue providing full trade literature and price quotations FOB UK port and CIF Montreal. Any inquiries by telephone should be made to the Export Services Branch, Board of Trade, Tel.: Chancery 4411, Ext. 901.

*Holland.*—Agreement has been reached between Holland and the USA on the use of further counterpart funds amounting to 2,776,000 guilders on a number of productivity projects. The bulk of the money is to go to the Delft Hydrological Laboratory for the erection of an open-air test laboratory. This, it is estimated, will absorb 2,300,000 guilders. Other projects are to be carried out by the Central Organisation for Applied Physical Research and the Netherlands Federation of Flax-Processing Industries.

* *India.*—The Government of Madras Electricity Department has issued a call for tenders, No. C.502, for the supply of structural steelwork in the power house for Tungabhadra hydro-electric scheme. The closing date for the receipt of tenders is September 23 next. All inquiries by telephone should be made to the Export Services Branch of the Board of Trade, Tel.: Chancery 4411, Ext. 738 or 771.

* *India.*—The Bombay Co., Ltd., 18A, Brabourne-road, Calcutta (Head Office:— 9, Wallace-street, Fort, Bombay), is interested in securing UK agencies for Concrete mixers, Motor graders, Bull-dozers and bitumen spreaders, Cranes, Draglines, Shovels, Scrapers, Loaders and stacker cranes. Interested UK firms should write direct to the Indian firm. Inquiries by telephone should be made to Chancery 4411, Ext. 5.

*Panama.*—A mission from Panama which recently visited the US is to seek assistance from the USA for the cementing of a 25-kilometre stretch of the Panamanian part of the Inter-American Highway.

A number of construction projects have recently been announced by the Government of Panama. These include the completion of the long unfinished Tocumen Airport and the building of a large number of hospitals and schools. Offers of materials and prefabricated parts have been received from UK manufacturers but for the moment the programme is held up by shortage of funds and also, in some cases, by a hope that foreign tenderers will extend credit not only on the materials which they supply, but also on local materials and labour.

The Institute of Economic Development is planning to construct a modern market complete with a floating dock, for the sale in Panama City of products arriving from the interior by sea. Space for the market is to be made by filling in part of Panama Bay.

Three large concrete buildings are to be constructed for the International Trade Fair to be held in Colon in 1954.

A new fruit-juice canning factory is being built by US capital at a cost of about $60,000.

*South Africa.*—Great progress is being made with the South African Broadcasting Corporation's £2m. programme to develop broadcasting in the Union. During last year a new medium-wave station was erected at a cost of about £36,000 at Pietersburg in the Northern Transvaal. The design work has been completed for similar stations at Bloemfontein in the Free State, and Kimberley in the Cape Province, which will each cost an estimated £30,000. It has also been decided to build a short-wave station at a cost of £350,000 at Paradys, near Bloemfontein. It is hoped that the project will be completed within a few years.

An overseas firm, as yet unnamed, has been granted a permit to establish a £200,000 factory at Pinetown, near Durban. The firm is proceeding with its plans.

A new coke installation has recently been opened in Natal, and several industrial firms are now contemplating building factories near by because of the proximity of fuel supplies.

The Pretoria City Council has invited building contractors to build experimental houses for natives at its Vlakfontein scheme. One of the conditions of the contract is that the houses should not cost more than £200. A Pretoria firm of building contractors completed an experimental house at the new Vlakfontein native residential area recently. The house was built on foundations prepared according to the Council's plans for native houses in the area.

* *Southern Rhodesia.*—Salisbury Municipality will shortly be calling for tenders for seven units of prefabricated storage shedding. The Municipality has one large storage shed, 300 ft. by 75 ft., a steel-framed building with saw-tooth roof, corrugated-iron sheeting and roof and sliding doors. It is made up of units 75 ft. by 30 ft., and specifications are now being prepared for seven more similar units. It is understood that the Municipality intend to extend their storage space on these lines progressively during the next four or five years. All inquiries by telephone should be made to Chancery 4411, Ext. 5.

*USA.*—A number of interesting tenders are open in the US for various types of construction work. One is for the construction of a chemical processing building to be erected by the Corps of Engineers of the US Army. Another tender which has been put out by the Corps of Engineers is for the construction of an airport surveillance radar facility at Brookley Air Force Base, Alabama. Also open is the job for the building of an overlook shelter and the addition to operation buildings at Allatoona Reservoir, Georgia. A number of construction projects are on hand for the military forces all over the USA, and interested firms should contact the Embassy in London for further information.

*USSR.*—New blocks of flats, schools, shops and hospitals are being built in the Soviet town of Gomel, which was overrun and destroyed by the Germans during the last war. A new palace of culture has recently been built, which has a concert hall seating 900 people. There are also side rooms in this building for amateurs. In the town square a large theatre is being built which has been designed on traditional Russian lines.

* From the Board of Trade Special Register Information Service.


**CHURCH ROOF COVERINGS**

A survey of alternative materials and their method of use, prepared by a committee set up by the Central Council for the Care of Churches in conjunction with the Society for the Protection of Ancient Buildings.

**PRICE 2/3; by Post 2/6**

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# TRADE NEWS

### Price Reductions

A reduction in the price of their "Hydraloader" has been announced by W. E. Bray and Co., Ltd., Faggs-road, Feltham.

Substantial price reductions of up to £100 for "Matbro" two-ton diesel fork lift trucks and bulk loaders have also been made by Mathew Brothers, Sandy-lane, Wallington, Surrey.

### Computing Sky Factor

A method of computing sky factor has been developed, employing a protractor designed specifically to deal with industrial roof lighting problems. This is the two-scale Dew Bowley "XY" factor protractor. The two scales presented on a single protractor are used in the cross and long section respectively and cover all roof slopes from 0-90 degrees, sky factor being the product of different readings read on the two scales. A number of these protractors, complete with working instructions, are available from Imperial Chemical Industries, Ltd., Plastics Division, Black Fan-road, Welwyn Garden City, Herts.

### Diesel Engines

An 800 BHP general-purpose diesel engine is being displayed for the first time by Crossley Brothers, Ltd., 308, Regent-street, W1, at the Engineering and Marine Exhibition being held at Olympia, London, until September 17. This engine is a 12-cylinder unit of direct-reversing "Vee" design. Their other exhibits include a 250 BHP packaged power unit which incorporates a four-cylinder scavenge pump diesel engine of the "EST" type. It is a self-contained unit with radiator, underbase and clutch-operated power take-off, and is especially suitable for installation in excavators. Details of the display are contained in No. 170 of the "Crossley Chronicles," a periodical review published by the manufacturers concerning diesel engines and gas producing plant.

# The SCOTTISH BUILDER

## Reports of Scottish New Towns

HOUSE construction gathered momentum last year in both Scotland's New Towns, according to the reports of the East Kilbride and Glenrothes Development Corporations, which were published together on August 27 (HMSO, price 2s. 6d.). The reports cover the period April 1, 1952, to March 31, 1953.

Both Development Corporations emphasise that if the new communities are to be balanced and self-contained, steps must be taken to encourage a variety of industries.

In East Kilbride, where the population has increased by over 3,000 since New Town operations began, 458 new houses and five shops were completed during the year. Also completed during the year were 493,000 sq. ft. of factory space, nine miles of roads and 12.8 miles of sewers. At the end of the year, 801 houses had been completed and 1,326 were under construction. Drainage and roads had been put in hand for 1,290 houses and flats. Contracts for the building of 1,097 houses and flats were placed and tenders received for a further 390.

The report says that a new range of "space-saving" types of houses has been designed and that these are likely to be used extensively in future housing developments. Of the houses completed during the year, 182 were non-traditional. The report notes, however, that the majority of tenants seem to prefer traditional houses, which are lower in cost but take longer to build.

In conclusion, the report states that there should be greater co-ordination between the Departments concerned in implementing the policy of developing new towns as recommended in the reports of the Reith Committee. By the end of 1955 the population of East Kilbride will reach 12,000, and such a town will require a town centre, shops, a cinema, an hotel and other amenities.

The audited accounts included in the report show that the net capital expenditure for the year was £1,783,026.

The Glenrothes Development Corporation report says that reasonable progress has been maintained in the rate of house completions over the year, resulting in a total of 270 houses being completed. At the end of the year the Corporation had completed 336 houses, and 531 were under construction. Contracts were placed for 57 houses and tenders received for a further 811.

In addition to the houses constructed by the Corporation, Fife County Council completed their post-war scheme of 308 houses, forming part of the New Town, apart from two houses which are to be built on a site not yet available for them. Of the total houses completed by the Corporation and the County Council, 592 are situated in the Woodside precinct, which now presents the appearance of being fairly well built up, while 50 houses are situated in Auchmuty precinct.

The Corporation with its own staff has produced various designs of low-cost houses of traditional construction. The Corporation has reason to believe, states the report, that these experiments have been worth while. In the case of one three-apartment type dwelling a saving of at least £250 per house was evident in the cost compared with similar house types used in earlier developments. A further saving of about £200 per house in flat blocks has been achieved by the reduction in floor to ceiling heights to 8 ft. on ground floors and 7 ft. 6 in. on first floors.

The audited accounts included in the report show that the net capital expenditure for the year was £714,249.

## Saltire Society Awards

THE SALTIRE SOCIETY AWARDS for good housing design for 1952 have, as briefly reported in our last issue, been made to Glasgow Corporation for flats erected at Pollok, known as Calfhill Court, and to the East Kilbride New Town Corporation for houses in their Murray 1st Development.

This is the third Saltire Society award for flats that has been made to Glasgow Corporation since the war, but it is the first occasion on which either of the New Town Corporations in Scotland has received one.

Calfhill Court is a four-storeyed block of flats designed by Mr. A. G. Jury, FRIBA, City Architect of Glasgow, to accommodate single women.

The building, states the Saltire Society, has a pleasant domestic quality designed with a lightness of touch not hitherto much associated with modern housing in Scotland. "The exterior, despite its four storeys, has a marked horizontal emphasis, is harled a soft pink, and decorated with wrought-iron balconies. A round arched feature of one gable, along with pantiled roofs, lends a slightly Spanish quality to the exterior, which forms a welcome contrast to the severity of the surrounding blocks of earlier Corporation housing."

The housing in the Murray 1st Development at East Kilbride was designed by Mr. D. P. Reay, ARIBA, until lately chief architect of the Corporation.

Of this the society states that it gives good street grouping without monotony. "A variety of house types are set behind lawns planted by the Corporation, the existing trees being preserved, and all unsightly fences or barricades being avoided. Though devoid of almost all applied ornament, the design of the three- and four-apartment houses has a welcome air of vitality and freshness. In one type, the vertical quoins in smooth rendering articulate the varying colour of harling for the separate houses making up the terraces; but the central horizontal bands, where used, would perhaps have been better omitted. The details of the front entrance doors and hall windows are sensitive, while the door 'furniture' has obviously been carefully chosen."

The Society commends the housing—especially the layout—of the Inch Estate, Edinburgh—the architect for which was Mr. D. Stratton Davis, ARIBA—with particular reference to the section alongside Dalkeith-road. The greater part of this development, they point out, is, however, not eligible for the awards now being made, which are for work completed during 1952.

The Society also particularly commends a composite group at Whitemoss, at the entrance to the East Kilbride New Town, designed by Mr. Alan Reiach, ARIBA.

## SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from February ?, 1953. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 3s. 6½d.; Labourers, 3s. 1d.

For apprentices, the rates are:

| Year. | Percentage of Craftsman's rate. | For week of 44 hours. s. d. |
|---|---|---|
| 1st | 25 | 38 11½ |
| 2nd | 33½ | 51 11½ |
| 3rd | 50 | 77 11 |
| 4th | 66⅔ | 103 10½ |
| 5th | 75 | 116 10½ |

For female labour, the rates are:

| | s. d. |
|---|---|
| Operatives on craft operations (at end of probationary period) | 3 1 |
| Operatives on labouring operations (at end of probationary period) | 2 9½ |

## NEW BUILDINGS

**Blantyre.**—Lanarkshire to have plans prepared for 70 houses to be erected on a development site, for which the architect is Samuel MacColl (A), County-chbrs., Beckford-st., Hamilton West.

**Dumbartonshire.**—Plans in hand for the erection of 56 houses at Drumchapel, for which the architect is Archibald J. Jury (F), Council Housing Offices, The Trongate, Glasgow.

**Dumfriesshire.**—Plans prepared for the erection of 60 houses on Annan sites at Cayshill, Thorburn-cres., Newington, and Newington-rd. The Council architect is James I. Rodger, Council Offices, Annan.

**Edinburgh.**—Plans prepared by their architects for scheme of reconstructions and additions, to be carried out for William Macewan & Co., Ltd., at Fountainbridge.

**Edinburgh.**—Plans prepared by their architects for new Parish Church Halls, which are to be erected at Chamberlain-rd., for The Church of Scotland, George-st., Edinburgh.

**Glasgow.**—Plans in hand for John Woyke & Co., Ltd., Balleter-st., for new buildings to be erected at Bognar-rd. The architects are Campbell & A. D. Hyslop (F), United Kingdom-bldgs., 124, St. Vincent-st., Glasgow.

**Glasgow.**—Plans for extensions to be erected at Govan have been prepared by the staff of The British Polar Engines, Ltd., 181, Helen-st., Glasgow.

**Glasgow.**—Plans prepared by their architects for new Parish Church Halls, which are to be erected at Barnbeth-rd., Pollock, for The Church of Scotland, George-st., Edinburgh.

**Glasgow.**—Plans prepared by their architects for a factory for Robertson, Dunn & Co., Ltd., 1036, Crow-rd., which will be erected at Partick.

**Glasgow.**—Plans prepared for alterations and additions to the Catholic School at Glenburn-dr., Possilpark. The architect is John MacNab (F), 129, Bath-st., Glasgow.

**Kilmarnock.**—TC are to erect an additional 64 dwelling houses at the new development scheme at Onthank at an est. cost of £93,000.

**Lanarkshire.**—Plans to be prepared for 70 houses to be erected at (East Site No. 2) East Kilbride, for which the architect is Frank Scott (L), Torrence-bue., East Kilbride.

**Lanarkshire.**—Plans in hand for extensions and additions to The Clyde Iron Works, for which the architects are Coiville, Ltd., 195, West George-st., Glasgow.

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# The Builder FUTURE CONSTRUCTION

*Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.*

## CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

## BUILDING

### SEPTEMBER 10.

***†Gateshead BC.**—178 houses at Wrekenton neighbourhood unit; stage 2, section 2 (Blackhill area). BS. Dep. £5 5s. Tenders by October 15.

### SEPTEMBER 11.

***†Birmingham City C.**—Contract 295, seven dwellings at Brays-rd., Sheldon; contract 320, four dwellings at Folliott-rd., Lea Hall; contract 320, two dwellings at Ivyfield-rd., Erdington. City E&S.

***Birmingham City C.**—133 dwellings in two contracts and 36 flats. City E&S. Dep. £2 2s. each contract.

### SEPTEMBER 12.

***Cheltenham BC.**—12 flats at Pittville-circus. BE. Dep. £2 2s.

***Cheltenham BC.**—15 flats, Alstone-la. L. W. Barnard & Ptnrs., 13, Imperial-sq. Dep. £2 2s.

***Salford City C.**—18 flats on site in Cumberland-St. City E. Dep. £2 2s.

### SEPTEMBER 14.

***†Bristol CC.**—Junior school at Henbury. City A. Dep. £2 2s. Tenders by October 16.

***†Horsey BC.**—30 flats, Sydney-rd., and 6 flats, Wightman-rd. BE&S. Tenders by October 5.

***†Southampton BC.**—Public conveniences at Town Quay. BE. Dep. £2.

### SEPTEMBER 15.

***†Folkestone BC.**—Contract No. 6, four shops with living accommodation over. BE. Dep. £3 3s.

### SEPTEMBER 16.

**Basford RDC.**—Two houses at Kimberley (Church Hill site); two houses at Newthorpe (Sewage Works site); 78 houses at Calverton. E, S and Hsg. A. Dep. £3 3s.

***†Hendon BC.**—Branch library at Orange Hill-rd., Burnt Oak, Edgware. BE&S. Dep. £2 2s.

***†Wimbledon BC.**—Ten flats and four houses on various sites. BE&S. Dep. £2 2s.

### SEPTEMBER 18.

***†Isle of Ely CC.**—First part of Wisbech College of Further Education. County A. Dep. £4 4s. Tenders by October 24.

***†Sutton and Cheam BC.**—21 houses at Gander Green-la. BE&S. Dep. £3 3s. Tenders by October 23.

### SEPTEMBER 21.

**Egham UDC.**—Alterations and additions to Literary Institute, High-st. E&S. Dep. £2 2s.

**Leek UDC.**—40 flats on Haregate estate. J. Gilchrist, FRICS, Town Hall. Dep. £2 2s.

***Oswaldtwistle UDC.**—35 houses on Thwaites-rd. housing site. E&S. Dep. £5 5s.

**Worthing RDC.**—24 houses on Glebeland estate, Ferring. E&S. Dep. £2 2s.

### SEPTEMBER 22.

***Essex CC.**—Alterations at Ash Farm, Weeley, near Clacton-on-Sea. County Land Agent and Valuer, 69, Duke-st., Chelmsford.

***Ilford BC.**—12 flats and 15 garages at Maypole Estate (part II). BE&S. Dep. £5 5s.

### SEPTEMBER 24.

**Brecknock RDC.**—13 houses and site works at Penpetre site, Talybont-on-Usk. J. Jones, architect, St. Mary's-chbrs., Abergavenny. Dep. £3 3s.

### SEPTEMBER 25.

***Portsmouth City C.**—Southern Boys' Grammar School at Baffins. City A. Dep. £3 3s.

### SEPTEMBER 26.

***Merioneth EC.**—Practical instruction room, Ffestiniog Grammar School. County A. Dep. £3 3s.

**Wirral UDC.**—Six houses and two shops at Irby-rd., Pensby. W. Roberts, Clerk of Council. Dep. £2 2s.

### SEPTEMBER 28.

***Finchley BC.**—Single-storey building at East End-rd., Finchley, N3. BE&S. Dep. £2.

### SEPTEMBER 30.

***Beds. CC.**—Site clearance and erection of farm buildings at Mogerhanger. County Land Agent, Shire Hall, Bedford.

### OCTOBER 2.

***Birkenhead CBC.**—203 dwellings at Woodchurch estate, contract No. 13. Boro' A. Dep. £2 2s.

### OCTOBER 5.

***East Ashford RDC.**—Ten bungalows and six houses at Wye. C. Field, Clerk of the Council.

### OCTOBER 9.

***Fulwood UDC.**—Two flats at junction of Lulworth-rd. and Sharoe Green-la. Lillie & Kirkham, LL.RIBA, 105, Fishergate, Preston. Dep. £2 2s.

***Martley RDC.**—14 houses and site works at Great Witley, Worcs. E. Turner, 1, The Tothing, Worcester. Dep. £2 2s.

### OCTOBER 19.

**Bentley-with-Arksey UDC.**—42 houses, contract No. 51. R. Penlington, E, Council Offices. Dep. £2 2s.

### NO DATE.

***Midhurst RDC.**—36 dwellings at Linchmere; 8 dwellings at Elsted. T. Greenfield, FRIBA, "Newstead," Midhurst. Dep. £1 1s.

## PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

### SEPTEMBER 14.

***Hornchurch UDC.**—(1) Conversion of decontamination building into dressing accommodation, Upminster Recreation Ground; (2) external redecoration at Council Offices. E&S. Dep. £2 2s. each contract.

***Southend-on-Sea CBC.**—Chain link fencing. Boro' A., 30, Alexandra-st. Dep. £2.

### SEPTEMBER 16.

***†Swansea BC.**—Heating installation and hot water supply. Boro' A. Dep. £2.

### SEPTEMBER 17.

***Harrow UDC.**—Reconditioning and alteration to sanitary accommodation at Bridge School, Wealdstone. E&S. Dep. £2.

### SEPTEMBER 18.

***Abertillery UDC.**—2,700 lin. yds. fencing at Rose Heyworth housing site. Davies & Hurley, FA.RIBA, 12, Cross-st., Abergavenny.

### SEPTEMBER 22.

***Islington MBC.**—Overhaul and repair of winding gear to lights at Baths Establishments Housing Manager. Dep £1 1s

### OCTOBER 6.

***Liverpool City C.**—Redecoration of 20 cottages at Abertridwr, Llanwddyn, Montgomery. WE.

## ROADS, SEWERAGE AND WATER WORKS

### SEPTEMBER 16.

**Basford RDC.**—Site works for 126 houses at Jacksdale (Selston); site works for 15-acre estate (Nuthall). E, S and Hsg. A. Dep. £3 3s.

**Birmingham City C.**—Reconstruction of Bordesley Green between Victoria-st. and Blake-la., and removal of tramway track between Blake-la. and Belchers-la. City E&S. Dep. £2 2s.

### SEPTEMBER 18

**Clun RDC.**—Water supply to Lydham, More, Norbury and Wentnor, Contract No. 1. A. H. S. Waters, MInstCE, engineer, 25, Temple-row, Birmingham, 2.

### SEPTEMBER 21.

**Portsmouth City C.**—Clearing, levelling and soiling 12 acres at Western-rd. tip, and construction of carways. City E. Dep. £1 1s.

**†Warrington Corpn.**—Forest Farm scheme: Contract No. 7, pumping station, sump and site works. Newton Hollow scheme: Contract No. 2, clear water tank, pumping stations and site works. Binnie, Deacon & Gourley, engineers, Artillery House, Artillery-row, Victoria-st., Westminster, SW1. Dep. £5 each contract. Tenders by October 21.

### SEPTEMBER 22.

**Bletchley UDC.**—Advance preparation of Castle estates to provide services for 200 dwellings. E&S. Dep. £5 5s.

### SEPTEMBER 23.

**Bathavon RDC.**—Advanced preparation of the Corston housing site. S, Council Offices, Westgate-bldgs., Bath. Dep. £2 2s.

**Birmingham City C.**—High-st., King's Heath, sewerage. City E&S, Civic Centre, Birmingham, 1. Dep. £2 2s.

### SEPTEMBER 24.

***Guildford BC.**—Shot bored pile foundations and site excavation works for 114 houses at Park Barn. BE&S. Dep. £2 2s.

### SEPTEMBER 25.

**Ruislip-Northwood UDC.**—Making-up of Great Central-ave. (part), Priors-gdns., Cedar-ave., and Southpark-way, Ruislip. E&S. Dep. £2 2s.

### SEPTEMBER 28.

**Wing RDC.**—Dagnall sewerage and sewage disposal. Elliott and Brown, Stanley House, Pelham-rd., Nottingham. Dep. £3 3s.

**Witney UDC.**—Sewerage and sewage disposal scheme. E&S, Council Offices, 26, Church Green, Witney.

### NO DATE.

**Sturminster RDC.**—1,200 lin. yds. sewers, pumping station, sewage disposal works, etc. Lemon and Blizard, engineers, Lansdowne House, Castle-la., Southampton. Dep. £2 2s.

## GENERAL BUILDING WORK

### (LONDON)

**Barnet.**—FLATS.—UDC propose the erection of 36 flats in three blocks with six garages at the junction of Oakleigh-rd. North and Oakleigh-ave.

**Ilford.**—THEATRE.—General Purposes Com. recommend the BC to proceed with the erection of a Little Theatre at total estimated cost of £8,541.

**Leatherhead.**—HOUSES.—Ministry has allowed an appeal by F. M. Muncey for the erection of four houses at Gatesden-rd., Fetcham Lodge estate.

**Malden.**—SPORTS PAVILION.—BC propose the redevelopment of Malden-rd. recreation ground, including the erection of a sports pavilion.

**Richmond.**—FLATS.—Proposals have been made by W. E. and S. Rumph (Builders), Ltd., 9, Widmore-rd., Bromley, for the erection of 25 flats on the site of Carrington Lodge, Sheen-rd.

**Richmond.**—FLATS.—CC are recommended to approve a scheme proposed by TC for the erection of 24 flats in two blocks of three storeys at Townshend-ter.

**Southgate.**—HOUSES.—Planning permission has been given to George Reed (Builders), Ltd., 256a, Green-la., Palmers Green, to erect 36 houses with garages at South Lodge-dr.

**Westminster.**—ABBEY RESTORATION.—Repairs and restorations are to be made to Westminster Abbey. They will include the cleaning and renovation of the interior sculpture and walls, restoration of the vaulting ribs in the cloisters, repair work on the pinnacles and external balustrades, renovation of the parapets, and the stripping, recasting and relaying of the roof leading. Cost of the 19 items recommended as urgent by the surveyor ranges from £2,500 to £25,000.

### (PROVINCIAL)

**Barrow-in-Furness.**—BC propose extensions at Rock Lea Home.—To prepare plans for eight houses at Park-rd., Ormsgill.—EC received approval for erection of North Walney cty. inf. and jun. schs. in 1954 programme, £39,325 and £51,392 est.

**Bebington.**—BC received approval for erection of first stage of Town Hall, £56,000 est.

**Bingley.**—UDC to reinvite tenders for 41 houses at Cottingley, seven at Cillingworth and 11 at Wilsden.

**Blackpool.**—R. Lancaster & Sons propose erection of block of residential flats fronting Queen's-dr., Norkeed-rd. and Wilvere-dr..

**Blackpool.**—BC to issue block licence to Blackpool Hsg. Assoc. for erection of eight bungalows on south side to Norgate.—EC seek Min. approval of revised plans for erection of Marton sec. mod. sch.

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**Boldon.**—Council to erect another 58 houses at West-dr., Cleadon.—UDC S, J. T. Edmondson, Council Offices, East Boldon.

**Cheadle.**—RDC propose further 62 houses consisting of 22 at Cheadle, 20 at Forsbrook, eight at Dilhorne and 12 at Cheddleton.

**Chesterfield.**—Brampton Brewery Co., Ltd., propose erection of licence premises at Keswick-dr. Architects, Wilcockson & Cutts, 12, Saltergate.

**Cleator Moor.**—MOE approved erection of RC sec. sch., £93,716 est.

**Colwyn Bay.**—TC seek approval for erection of crematorium.

**Coventry.**—TC approved 16 houses and 20 "No Fines" houses at Tile Hill neighbourhood unit.—Seek loan £90,100 for 72 flats at Bell Green.

**Cumberland.**—Newcastle Reg. Hospital Brd. propose X-ray dept. at Egremont Chest Clinic. Architect to Brd., P. H. Knighton, "Dunira," Osborne-rd., Newcastle-on-Tyne.

**Cumberland.**—C of E Auth. plan new churches at Barrow, Workington and Hensingham.

**Daventry.**—Licensing Justices approve plans for alterations at "The Admiral Rodney," Long Buckby; "Hare & Hounds," Woodford Halse; "Shoulder of Mutton," Crick; and "Fox & Hounds," Clay Coton.

**Denholme.**—UDC propose 26 houses at Minorea Farm estate.

**Dewsbury.**—TC propose adaptation of Highfield, Halifax-rd., as home for aged.

**Durham.**—Extensions to cost £30,000 to be made to factory of Webwear (Stanley), Ltd., at Craghead, Durham. Plans by North Eastern Trading Estate architect, Team Valley Trading Estate, Dunston-on-Tyne, steelwork.

**Eston.**—UDC to negotiate price for erection of 24 houses on Crossbeck estate, with C. W. Bell, Ltd., High-st., Eston.

**Eston.**—North Riding EC submitted plans to UDC for proposed Eston gram. and tech. sch. Cty. sch. A, D. W. Dickenson, Northallerton, and QS are Turner & Ing, 71, Linthorpe-rd., Middlesbrough.—Welford's Cleveland Bakery, Ltd., Corporation-rd., Redcar, submitted amended plans to UDC for proposed bakery at Trunk-rd., South Bank-on-Tees.—UDC approaching M of T regarding £100,000 scheme for building of road bridge over railway near Lorne-ter., South Bank.

**Flintshire.**—CC propose erection of sch. at Prestatyn in 1954 programme, £100,000 est.

**Gateshead.**—TC is to be allowed to erect another 149 houses this year.

**Gwyrfai.**—RDC propose 32 houses at Portdinorwie. Architect, J. Isgoed Williams, Richmond House, Penmaenmawr.

**Keighley.**—Trustees of Parish Church propose erection of sch., £40,000 est.

**Keswick.**—UDC approved plans by S for erection of 41 houses on Latrigg-cl. housing estate.

**Lancs.**—CC propose following in 1954/5 programme:—Four-bay fire stn. at Swinton, £77,872; three-bay at Royton, £60,000 est.; four-bay at Crosby, £60,000; three-bay at Fleetwood, £50,000; additional accommodation at Fire Brigade HQ at Broughton, £30,063 est.; three-bay at Hindley, £30,000 est.; three-bay at Bacup, £30,000 est.; three-bay at Ormskirk, £23,045 est. Architect, G. Noel Hill, Preston.

**Leics.**—Propose new homes for 35 people at Nottingham-rd., Ashby-de-la-Zouch and Park-rd., Earl Shilton.

**Ludlow.**—RDC propose eight houses at Munslow, four at Longville, 16 at Caynham, 10 at Coreley, 16 at Diddlebury, eight at Culmington and nine at Onibury.

**Manchester.**—EC approved extensions to Jews prim. sch.

**Mansfield.**—BC approved layout for six houses at junction of Abbott-rd. and Ruskin-rd., 10 aged persons' bungalows at Ward-pl., 40 Gregory flats and 26 houses at Ladybrook-la., and 90 houses and 10 aged persons' bungalows south of Beck-cres.

**Middleton.**—BC approved plans:—Layout for 134 houses and cottage flats and 16 aged persons' bungalows at Langley estate, for Manchester TC; six houses at Monmouth-st. for Whitworth Bros., 70, Grimshaw-la.; layout of dwelling houses at Penrhyn, Orme, Rhos, Ruthin, Conway-aves., Kirkway and Kingsway, for J. Saxon & Son, 648, Wilmslow-rd., Didsbury.

**Newcastle-on-Tyne.**—EC to appropriate land north of Slatyford-la. and south of Dewley-rd., for erection of two sec. schs. City A, George Kenyon, 18, Cloth Market, Newcastle-on-Tyne.

**Newcastle-on-Tyne.**—Hsg. Com's future building programme includes 4,245 houses. G. Kenyon, City A, 18, Cloth Market, Newcastle.

**Newcastle-under-Lyme.**—RDC propose 30 houses at Wood-la., 40 at Bignall End, 50 at Audley, 40 at Halmerend, 25 at Keele, 15 at Hales and 50 at Madeley. All in 1954 programme.

**North Riding.**—EC approved plans for prim. sch. at Southbank, cost £45,730. Plans by Cty. A, Northallerton.—CC recommended to approve building of prim. sch. at Thornaby, cost £56,000. Cty A, Northallerton.—CC recommended to approve building of ambulance stn. with flat and two houses at Richmond, cost £11,270. Plans by Cty A, Northallerton.

**Notts.**—EC received Min. approval for following in 1954/6 programme:—Stage 1 Bramcote Hills gram. sch., Beeston, £168,300 est.; Ley-la. sec. mod., Mansfield Woodhouse, £140,250 est.; instalment of Bancroft-la. sec. mod., Mansfield, £132,000 est.; instalment of Arnold-la. sec. mod., Carlton, £99,000 est.; Winthorpe-rd. jun. and inf., Newark, £44,968 est.; Valley-rd. jun & inf., West Bridgford, £44,968 est.; extensions at Worksop cty. tech. college, £41,700 est.; extensions at Eastwood cty. sec., £31,644 est.; first instalment of new schs. at Carlton-in-Lindrick prim. and Nuthall prim., Eastwood, £25,696 est.; extensions at Ollerton cty. sec. and Thieves Wood Boarding special sch. for Physically Handicapped Children, £25,000 est.; extensions at Sir Frederick Milner and Hallcroft cty. sec., East Retford, £17,600 est.; extensions at Hopwell Hall Special sch., £15,000; extensions at Newark cty. tech. college, £10,000 est.

**Scarborough.**—Gelder & Kitchen, Alfred Gelder-st., Hull, prepared plans for coach stn. at Westwood, for East Yorks Motor Services, Ltd.—TC approved plans for block of nine flats in Weydale-ave., for G. Wright & Sons.—TC to be allowed to erect another 65 houses this year, and contracts are to be arranged with local builders.

**Seaham.**—Block licence issued to G. H. Plemper, Ltd., St. Hilda's Works, Old Chester-rd., Sunderland, for erection of 40 houses on Leechmere estate.

**Sedgley.**—UDC propose erection of Cornish Unit type houses at Cricket Meadow site.—To prepare payout for flats at Dudley-rd. site.

**Stafford.**—RDC seek approval for 411 dwellings in Hixon and Gnosall areas.

**Staffs.**—EC received approval for following in 1954/5 programme:—Extensions at Stafford tech. col., Cannock Chase Mining and tech. col., and first instalment of extensions at Bilston College of Further Education.—Seek approval for erection of hostel for aged adjacent to Broadfield House, Kingswinford.

**Staffs.**—CC propose conversion of Rugeley sec. gram. sch. as mixed sch., £12,560 est.

**Stanley.**—UDC approved development scheme at Lintz, which includes building 66 houses and 14 houses for old people. Plans by S.—Armstrong Omnibus Co., Ltd., Ebchester, seek alternative site for proposed bus garage at New Kyo.

**Stoke-on-Trent.**—EC approved inclusion of following schs. in 1954/5 programme:—Willfield cty. sec. sch.; Bentilee cty. prim. inf. and jun. schs., and Oxford-Fegg cty. prim. inf.

**Sunderland.**—Corp. Libraries Com. propose to convert Grindon-cl. into library and museum, cost £15,0000. Plans by H. C. Bishop, Boro' A, Grange House, Stockton-rd.

**West Hartlepool.**—TC approved revised plans by C. M. Yuill, Ltd., bldrs., for the erection of 16 houses in Kingsley-ave.—Durham CC to erect police houses in Torquay-ave. and Campbell-rd.—Boro' A to prepare sketch plans for erection of four-storey flats in central area of town.—TC plan erection of 17 maisonettes on Owton Manor estate.—Plans approved for erection of 472 houses on Owton Manor estate (section 5), for TC.—Air Min. to construct seven married officers' quarters in Station-la.

**Worcs.**—CC propose improvements to Waseley Hills sch., Rubery.—To invite tenders for extensions to Kidderminster fire stn., £18,000 est.—Received approval for following schs. in 1954/5 programme: Bromsgrove cty. sec. gram., £174,500; Bransall cty. jun., Oldbury, £51,000; Redditch cty. sec. tech., £150,000; 2 FE instalment of Wythall cty. sec. mod., £118,000; and Halesowen cty. sec. tech., £150,000.

## TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

**Barnard Castle.**—Erection of 100 houses for RDC. Plans by the Architect, Galgate, Barnard Castle. 32 houses at Gainford and 46 at Evenwood: *R. C. Williamson (Durham), Ltd., Rowlands Gill.

**Barnsley.**—Houses for TC: *C. D. Potter, Ltd., 119, Doncaster-rd., Barnsley, £28,156 (18); *Arthur Dunk, Ltd., 39, Farrar-st., Barnsley, £12,696 (8).

**Bridlington.**—Erection of 68 houses and 14 bungalows at West Hill estate, for EC: *A. Schofield (Builders), Ltd., St. Bedes, Hornsea.

**Chester-le-Street.**—Work has started on the erection of a Methodist Youth Hall. Architect, E. M. Lawson, Barras-bdgs., Barras Bridge, Newcastle-on-Tyne: *W. Norman, West-la., Chester-le-Street.

**Eston.**—Erection of 32 houses on the Redcar-rd. estate, for UDC: *G. V. Miles, Normanby-rd., Normanby (eight); *W. J. Emmerson, Trenholme-rd., Middlesbrough (16); *A. G. Mohan, Eston (eight).

**Evesham (Worcs).**—42 houses and eight flats at Badsey and eight at Cow Honeybourne, for RDC: *G. Steward & Son, Ltd., 144, High-st., Broadway; six at Bretforton: *Wheeler & Mansell, Ltd., Lime-st., Evesham.

**Fordingbridge.**—Erection of 34 houses at Whitsbury-rd., Fordingbridge. Frank Andrews, LRIBA, architect, 45, High-st., Ringwood: *Rawlings, Ltd., Hamworthy Poole.

**Glasgow.**—Erection of shops and houses at Scaraway-st., Milton. Archibald J. Jury (F), architect, Council Housing Offices, Glasgow Cross, Glasgow: *Sir John Train, Ltd., Glasgow, C.1, £20,220.

**Greenock.**—Reconstruction and additions, est. to cost £50,000, to be carried out at The Old Picture Palace, Brougham and Robertson-sts. Crawford & Neil (F&A), architects, 133, Cathcart-st., Cathcart-sq., Greenock: *D. Macewing & Sons, Ltd., Greenock, and A. MacDougall & Son, Ltd., Glasgow.

**Halifax.**—Erection of 66 houses at Mixenden, for TC: *Joseph Walker & Son, Ltd., Halifax, £92,488.

**Lanarkshire.**—Additions to the Nitshill Laboratories: *Hugh Leggett & Co., Ltd., Gladstone-pl., Barrhead, Renfrewshire.

**Lanarkshire.**—Plans prepared for new factory for the Scottish Industrial Estates, Ltd., to be erected at West Kilbride, for Hayward, Taylor & Co., Ltd., of Edinburgh and Luton: *Hugh Leggett & Co., Ltd., Barrhead, Renfrewshire.

**¶London (Air Ministry).**—Contracts to value of £500 or over for week ended August 29:—

*Construction of Aircraft, Servicing Platform*: Turriff Construction Corporation, Ltd., Budbrook-rd, Warwick. *Water Proofing Services*: Macartney, Ltd., Birkett House, 27, Albemarle-st., London, W1. *Resurfacing Work*: Allweather Mechanical Grouting Co., Ltd., 47, Victoria-st., London, SW1; Roads Reconstruction (1934), Ltd., Stoneleigh House, Frome, Somerset; Tarslag, Ltd., Bowesfield-la., Stockton-on-Tees; The Limmer & Trinidad Lake Asphalt Co., Ltd., Steel House, Tothill-st., London, SW1; William Prestwick & Sons, Ltd., Dronfield, Sheffield; The Neuchatel Asphalte Co., Ltd., Northern Board, Harbour Board estate, Belfast, Northern Ireland; Constable Hart & Co., Ltd., Lion House, Richmond, Surrey.

*Air Conditioning & Ventilating Services*: E. L. Maiden, Ltd., 27, Fitzroy-sq., London, W1. *Hot Water Installation*: Benham & Sons, Ltd., 66, Wigmore-st., London, W1. *General Maintenance Work*: E. & A. Sprigings, 201, Highland-rd., Portsmouth; Elsby Bros., Sneyd Hill, Burslem, Stoke-on-Trent.

**London (British Railways).**—The undermentioned contracts have now been placed by the Eastern Region of British Railways: Renewal of permanent way in the Peterborough district, *Tersons, Ltd., 4, Dollis Park, Finchley, London, N3. Permanent way alterations, etc., in connection with station reconstruction and widening scheme at Potters Bar station, *Tersons, Ltd., 4, Dollis Park, Finchley, London, N3.

**London (British Railways).**—The Eastern Region of British Railways announce that the undermentioned contracts have now been placed:—

Supply and erection of lineside fencing in the Peterborough district: *W. A. Hooker, 80, High-st., Boston, Lincs. Renewal of permanent way in the King's Cross district: *Tersons, Ltd., 4, Dollis-park, Finchley, London, N.3.

**¶London (MOW).**—Contracts placed by the MOW during week ended August 22.—*London*: Tooks Court, EC4, PO shafthead protection, John Mowlem & Co., Ltd., 91, Ebury Bridge-st., SW1. *Buckinghamshire*: NAB Hostel, Marswood Airfield, Bucks., alterations to huts on sites 7 and 8, Frank J. Mitchell, Ltd., 25, Wendover-rd., Aylesbury, Bucks. *Cornwall*: The Lizard, erection of MOT lookout and signal station, Carkeek & Sons, Ltd., Tolgus Hill, Redruth, Cornwall. *Derbyshire*: M/Fuel and Power SMRE, Harper Hill, Buxton, new gate house and reception office, R. Green & Sons (Chapel-en-le-

Frith), Ltd., 117, Market-st., Chapel-en-le-Frith, Via Stockport.

*Gloucestershire*: PO Crown works, St. Philips, Bristol, demolition work and erection of cycle sheds, W. Bedford, Westerleigh, Nr. Bristol. *Lanarkshire*: Board of Control, State Institution, Carstairs, painting fence, Maclean & Speirs, 417, St. Vincent-st., Aberdeen. *Northamptonshire*: M/Supply, BE Store, Yardley Chase, re-felting of ten magazine roofs, Fleximastic, Roofs & Asphalte, Ltd., Barkby-rd., Leicester. *Nottinghamshire*: Blocks 5, 6 and 7, Chalfont-dr., Nottingham, internal decorations, G. & C. Whittle, Ltd., Daybrook-sq., Arnold, Nottingham. *Warwickshire*: Stratford-rd., Sparkhill, Birmingham, erection of TDO, William Sapcote & Sons, Ltd., 87, Camden-st., Birmingham, 1.

¶**London (War Dept.).**—Contracts placed by WD during week ended August 22:—

*Monmouthshire*: Miscellaneous, D. Cantry, Barry. *Kent*: Heating and hot water, The "Ray Heating" Co., Ltd., Leatherhead. *Oxon*: Waterproofing store sheds, Thomas Cotton, Ltd., Mansfield. *Berkshire*: Building, E. C. Hughes, Ltd., Wokingham. *Nottinghamshire*: Painting and decorating, Donald Humberstone & Co., Ltd., Louth. *Yorkshire*: Painting and decorating, Arundel (Contractors), Ltd., Bradford. *Derbyshire*: Painting, Harold G. Oates, Ltd., Bradford.

**Mere and Tisbury.**—Four houses at West Tisbury, for RDC. Bothams & Brown, LRIBA, architects, 32, Chipper-la., Salisbury. Quantities by J. S. Nevill, FIAS, Tregarthen House, 24, West-st., Wimborne Minster:—

| | |
|---|---|
| Haynes & Son, Ivy-st., Salisbury .. .. | £6,796 |
| R. Butchen & Son, Warminster .. .. .. | 6,498 |
| *O. Cutler, The Cedars, Shaftesbury .. .. | 5,791 |

**Morpeth.**—Erection of 25 houses in Spelvit-la., for TC. BE, F. K. Perkins: *James Dodds & Son, Morpeth.

**Newcastle-on-Tyne.**—Shop alterations, Grainger-st., for Swears & Wells, Ltd.: *James White, Ltd., Team Valley Trading Estate, Gateshead.

**Notts.**—New gymnasium block at County training college, for CC: *W. Moss & Sons, Chalfont-dr., Nottingham, £12,385.

**Rugby.**—New casualty department at Hospital of St. Cross: *J. Parnell & Son, Ltd., Oliver-st., Rugby, £9,700.

**Saddleworth.**—Erection of 104 houses and 12 flats at Carr Barn estate, Greenfield, for UDC: *W. G. West, Ltd., 11, Great Underbank, Stockport.

**Sheffield.**—Erection of 691 dwellings on the Greenhill estate for BC. J. L. Womersley (F), City A. 124 dwellings, sections 9 and 11, *Public Works Dept., £145,117. 158 dwellings, sections 8 and 8A, *Public Works Dept., £176,994. 195 dwellings, sections 7, 12 and 13, *Public Works Dept., £225,471. 214 dwellings, section 6, *Ackroyd and Abbott, Ltd., £231,927.

**Stockport.**—Houses at Brinnington estate, for BC: *Senior Building Co., Ltd., 187, Wilmslow-rd., Cheadle (103); *J. Foulkes & Sons, Ltd., Fir Tree Farm, Brinnington (53).

**Wellington.**—229 houses at Hadley, for RDC: *Towers, Wilson & Co., Ltd., Woodthorne-rd., Tettenhall, Wolverhampton.


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